

**13. Courses of Study and Scheme of Assessment
ME COMPUTER INTEGRATED MANUFACTURING**

**(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									
15MC01	Applied Numerical Analysis	2	2	-	3	50	50	100	FC
15MC02	Materials and Manufacturing Engineering	2	2	-	3	50	50	100	FC
15MC03	Components and Architecture of CIM	3	-	-	3	50	50	100	PC
15MC04	CNC Machines and Robotics	3	2	-	4	50	50	100	PC
15MC05	Mechatronics System Design	3	2	-	4	50	50	100	PC
15MC51	Sensor Interface and Robotics Laboratory	-	-	4	2	100	-	100	PC
15MC61	Industry Visit & Technical Seminar	-	-	4	2	100	-	100	EEC
Total 29 Hrs		13	8	8	21	450	250	700	
II SEMESTER									
15MC06	FEA in Manufacturing	3	-	-	3	50	50	100	PC
15MC07	Geometric Modeling	3	-	-	3	50	50	100	PC
15MC08	Modeling and Analysis of Advanced Manufacturing Systems	3	-	-	3	50	50	100	PC
15MC09	Design for Manufacture and Assembly	3	2	-	4	50	50	100	PC
15MC10	Product Development and Reverse Engineering	3	-	-	3	50	50	100	PC
15MC__	Elective-1	3	-	-	3	50	50	100	PE
15MC52	Computer Aided Engineering Laboratory	-	-	2	1	100	-	100	PC
Total 20 Hrs		18	0	2	19	400	300	700	
III SEMESTER									
15MC__	Elective- 2	3	-	-	3	50	50	100	PE
15MC__	Elective- 3	3	-	-	3	50	50	100	PE
15MC__	Elective-4	3	-	-	3	50	50	100	PE
15MC__	Elective-5	3	-	-	3	50	50	100	PE
15MC__	Elective-6	3	-	-	3	50	50	100	PE
15MC53	Industrial Engineering Laboratory	-	-	4	2	100	-	100	PC
15MC71	Project Work I	-	-	6	3	100	-	100	EEC
Total 27 hrs		15	2	10	21	450	250	700	
IV SEMESTER									
15MC72	Project Work II	-	-	28	14	50	50	100	EEC
ELECTIVE THEORY COURSES(Six to be opted)									
15MC21	Quality Engineering	3	-	-	3	50	50	100	PE
15MC22	Enterprise Resource Planning	3	-	-	3	50	50	100	PE
15MC23	Supply Chain Management	3	-	-	3	50	50	100	PE
15MC24	Mechanics of Composites and Smart Materials	3	-	-	3	50	50	100	PE
15MC25	Industrial Robotics	3	-	-	3	50	50	100	PE
15MC26	Simulation Modeling and Analysis	3	-	-	3	50	50	100	PE
15MC27	Optimization Techniques	3	-	-	3	50	50	100	PE
15MC28	Advanced Metrology and Automated Inspection	3	-	-	3	50	50	100	PE
15MC29	Modern Manufacturing Processes	3	-	-	3	50	50	100	PE
15MC30	Micro Electro Mechanical Systems	3	-	-	3	50	50	100	PE
15MC31	Nanomaterials and Nanotechnology	3	-	-	3	50	50	100	PE
15MC32	Engineering Economic Analysis	3	-	-	3	50	50	100	PE
15MC33	Statistics and Reliability Engineering	3	-	-	3	50	50	100	PE
15MC34	Precision Engineering	3	-	-	3	50	50	100	PE
15MC35	Operations Management	3	-	-	3	50	50	100	PE
15MC36	Computational Fluid Dynamics	3	-	-	3	50	50	100	PE
15MC37	Information Technology in Manufacturing Applications	3	-	-	3	50	50	100	PE
15MC38	Industrial Design and Applied Ergonomics	3	-	-	3	50	50	100	PE
15MC39	Lean Six Sigma in Manufacturing and Servicing	3	-	-	3	50	50	100	PE
15MC40	Artificial Intelligence and Expert Systems	3	-	-	3	50	50	100	PE
15MC41	Sheet Metal Cutting and Bending Technologies	3	-	-	3	50	50	100	PE
15MC42	Precision and Micro Manufacturing	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