COURSE STRUCTURE

AND

DETAILED SYLLABUS

R16

MECHANICAL ENGINEERING

For

M.TECH. TWO YEAR PG COURSE

(Applicable for the students admitted into Academic Year 2019-20)

(I – II Years Syllabus)

RAJIV GANDHI UNIVERSITY OF KNOWLEDGE TECHNOLOGIES

Basar, Nirmal, Telangana – 504107

DEPARTMENT OF MECHANICAL ENGINEERING

RGUKT BASAR, TELANGANA

M TECH (MECHANICAL ENGINEERING) WITH SPECIALIZATION IN COMPUTATIONAL MECHANICS

COURSE STRUCTURE AND DETAILED SYLLABUS FOR M TECH IN COMPUTATIONAL MECHANICS

I YEAR
SEMESTER-I

Course No.	Course Name	L	T	P	C
MA5101	Advanced Engineering Mathematics	4	0	0	4
ME5101	Finite Element Methods in Engineering	4	0	0	4
ME5102	Advanced CAD	4	0	0	4
ME51xx	Elective - I	4	0	0	3
ME51xx	Elective - II	4	0	0	3
ME5701	CAE Lab	0	0	3	2
ME5702	Programming with MATLAB	0	0	3	2
		20	**0**	**6**	**22**

I YEAR
SEMESTER-II

Course No.	Course Name	L	T	P	C
ME5201	Advanced Engineering Mechanics	4	0	0	4
ME5202	Computational Fluid Dynamics	4	0	0	4
ME52xx	Elective - III	4	0	0	3
ME52xx	Elective - IV	4	0	0	3
ME52xx	Elective - V	4	0	0	3
ME5901	Seminar	0	0	2	1
ME5801	Advanced Engineering Mechanics Lab	0	0	3	2
ME5802	CFD Lab	0	0	3	2
		20	**0**	**8**	**22**

II YEAR
SEMESTER-III

Course No.	Course Name	L	T	P	C
ME6700	Project Phase I	0	0	24	12
ME6000	Comprehensive Viva	0	0	4	2
ME6901	Term Paper	0	0	4	2
					16

II YEAR
SEMESTER-IV

Course No.	Course Name	L	T	P	C
ME6800	Project Phase II	0	0	32	16
		0	**0**	**32**	**16**

LIST OF ELECTIVES FOR FIRST SEMESTER OF M TECH FIRST YEAR

S No	Course No.	Course Name	L	T	P	C
1	ME5103	Numerical Analysis	4	0	0	3
2	ME5104	Numerical Methods for Thermal Radiation Heat Transfer	4	0	0	3
3	ME5105	Advanced Thermodynamics	4	0	0	3
4	ME5106	Advanced Mechanics of Solids	4	0	0	3
5	ME5107	Advanced Fluid Mechanics	4	0	0	3
6	ME5108	Mechanical Vibration	4	0	0	3
7	ME5109	Experimental Stress Analysis	4	0	0	3
8	ME5110	Composite Materials	4	0	0	3
9	ME5111	Mechanical Behaviour of Materials	4	0	0	3
10	ME5112	Advanced Materials and Processing	4	0	0	3
11	ME5113	Manufacturing Automation	4	0	0	3
12	ME5114	Welding Science and Technology	4	0	0	3
13	ME5115	Condition Monitoring of Machines	4	0	0	3
14	ME5116	Robotics and Robot Applications	4	0	0	3
15	ME5117	Advanced Machining Processes	4	0	0	3
16	ME5118	Ergonomics	4	0	0	3

LIST OF ELECTIVES FOR SECOND SEMESTER OF M TECH FIRST YEAR

S No	Course No.	Course Name	L	T	P	C
1	ME5203	Optimization Methods in Engineering	4	0	0	3
2	ME5204	Soft Computing Techniques	4	0	0	3
3	ME5205	Simulation and Modelling	4	0	0	3
4	ME5206	Nonlinear Finite Element Methods	4	0	0	3
5	ME5207	Convective Heat and Mass Transfer	4	0	0	3
6	ME5208	Heat Exchanger Design	4	0	0	3
7	ME5209	Industrial Instrumentation	4	0	0	3
8	ME5210	Fluid Drives and Controls	4	0	0	3
9	ME5211	Theory and Design of Fluid Machinery	4	0	0	3
10	ME5212	Rotor Dynamics	4	0	0	3
11	ME5213	Tribology	4	0	0	3
12	ME5214	Fracture, Fatigue and Failure Analysis	4	0	0	3
13	ME5215	Computer Aided Engineering Design	4	0	0	3
14	ME5216	Biomaterials and Smart Materials	4	0	0	3
15	ME5217	Conduction and Radiation	4	0	0	3
16	ME5218	Nano Materials and Characterization	4	0	0	3
17	ME5219	Computer Integrated Manufacturing	4	0	0	3
18	ME5220	Additive Manufacturing	4	0	0	3
19	ME5221	Mechanics of Sheet Metal Forming	4	0	0	3
20	ME5222	Mechatronics and MEMS	4	0	0	3
21	ME5223	Product Design and Assembly Automation	4	0	0	3
22	ME5224	Medical Applications of RPT	4	0	0	3
23	ME5225	Structural Health Monitoring	4	0	0	3
24	ME5226	Aerodynamics	4	0	0	3
25	ME5227	Gear Engineering	4	0	0	3