MECHANICAL ENGINEERING

B. TECH (PART TIME) DEGREE COURSE

2013 SCHEME (RESTRUCTURED)

UNIVERSITY OF KERALA

THIRUVANANTHAPURAM

SCHEME -2013

PART TIME B.TECH (RESTRUCTURED)

MECHANICAL ENGINEERING (M)

First Semester

PT B. Tech Course No	Equivalent B. Tech Course No	Name of subject	Credits	Weekly load, hours			C A Marks	Exam Duration Hrs	U E Max Marks	Total Marks
				L	T	D/P				
P 13.101	13.301	Engineering Mathematics-II (ABCEFHMNPRSTU)	4	3	1	-	50	3	100	150
P 13.102	13.303	Fluid Mechanics(MS)	4	3	1	-	50	3	100	150
P 13.103	13.304	Mechanics of Solids (MNPSU)	4	3	1	-	50	3	100	150
P 13.104	13.306	Engineering Drawing (MP)	5					4		150
		Part A: Machine Drawing		0	0	2	25		50	
		Part B: Civil Engineering Drawing & Estimation		1	0	2	25		50	
P 13.105	13.107	Engineering Thermodynamics (MPNSU)	6	4	2	-	50	3	100	150
		Total	**23**	**14**	**5**	**4**	**250**		**500**	**750**

Second Semester

PT B. Tech Course No	Equivalent B. Tech Course No	Name of subject	Credits	Weekly load, hours			C A Marks	Exam Duration Hrs	U E Max Marks	Total Marks
				L	T	D/P				
P 13.201	13.401	Engineering Mathematics -III (BCHMNPSU)	4	3	1	-	50	3	100	150
P 13.202	13.402	Manufacturing Process (MN)	4	3	1	-	50	3	100	150
P 13.203	13.403	Electrical Technology (MP)	4	3	1	-	50	3	100	150
P 13.204	13.405	Fluid Machinery (M)	4	3	1	-	50	3	100	150
P 13.205	13.407	Fluid Mechanics & Machines Lab(MN)	3	-	-	3	50	3	100	150
P 13.206	13.508	Electrical & Electronics Lab (MP)	3	-	-	3	50	3	100	150
		Total	**22**	**12**	**4**	**6**	**300**		**600**	**900**

Third Semester

PT B. Tech Course No	Equivalent B. Tech Course No	Name of subject	Credits	Weekly load, hours			C A Marks	Exam Duration Hrs	U E Max Marks	Total Marks
				L	T	D/P				
P 13.301	13.501	Engineering Mathematics - IV (CMPSU)	4	3	1	-	50	3	100	150
P 13.302	13.503	Industrial Electronics(MP)	3	2	1	-	50	3	100	150
P 13.303	13.504	Mechanics of Materials (M)	4	3	1	-	50	3	100	150
P 13.304	13.302	Humanities (BEFMRSU)	3	3	0	-	50	3	100	150
P 13.305	13.305	Computer Programming and Numerical Methods (MP)	3	2	1		50	3	100	150
P 13.306	13.307	Thermal Engineering(MU)	4	3	1	-	50	3	100	150
P 13.307	13.308	Civil Engineering Lab (MP)	2	-	-	2	50	3	100	150
		Total	**23**	**16**	**5**	**2**	**350**		**700**	**1050**

Fourth Semester

PT B. Tech Course No	Equivalent B. Tech Course No	Name of subject	Credits	Weekly load, hours			C A Marks	Exam Duration Hrs	U E Max Marks	Total Marks
				L	T	D/P				
P 13.401	13.404	Metullargy and Material Science (MNPU)	4	3	1	-	50	3	100	150
P 13.402	13.406	Machine Drawing (M)	3	0	0	3	50	3	100	150
P 13.403	13.601	Metrology & Instrumentation (MP)	4	3	1	-	50	3	100	150
P 13.404	13.603	Computer Aided Design (MPU)	3	2	1	-	50	3	100	150
P 13.405	13.801	Energy Management(MP)	3	2	1	-	50	3	100	150
P 13.406	13.607	Computer Aided Modeling and Analysis Lab(MPU)	3	-	-	3	50	3	100	150
P 13.407	13.408	IC Engines Lab (M)	3	-	-	3	50	3	100	150
		Total	**23**	**10**	**4**	**9**	**350**		**700**	**1050**

Fifth Semester

PT B. Tech Course No	Equivalent B. Tech Course No	Name of subject	Credits	Weekly load, hours			C A Marks	Exam Duration Hrs	U E Max Marks	Total Marks
				L	T	D/P				
P 13.501	13.502	Theory of Machines (MP)	4	3	1	-	50	3	100	150
P 13.502	13.505	Machine Tools (MN)	4	3	1	-	50	3	100	150
P 13.503	13.506	ELECTIVE I	4	3	1		50	3	100	150
P 13.504	13.701	Principles of Management and Decision Modeling (MPU)	3	2	1	-	50	3	100	150
P 13.505	13.702	Mechatronics (MPSU)	4	3	1	-	50	3	100	150
P 13.506	13.507	Production Engineering Lab (M)	3	-	-	3	50	3	100	150
		Total	**22**	**14**	**5**	**3**	**300**		**600**	**900**

Sixth Semester

PT B. Tech Course No	Equivalent B. Tech Course No	Name of subject	Credits	Weekly load, hours			C A Marks	Exam Duration Hrs	U E Max Marks	Total Marks
				L	T	D/P				
P 13.601	13.602	Dynamics of Machinery (MP)	4	3	1	-	50	3	100	150
P 13.602	13.604	Heat and Mass Transfer (MSU)	4	3	1	-	50	3	100	150
P 13.603	13.605	Design of Machine Elements - I (M)	4	3	1	-	50	3	100	150
P 13.604	13.606	ELECTIVE II	4	3	1		50	3	100	150
P 13.605	13.802	Industrial Engineering (MPU)	3	2	1	-	50	3	100	150
P 13.606	13.608	Machine Tools Lab (M)	3	-	-	3	50	3	100	150
		Total	**22**	**14**	**5**	**3**	**300**		**600**	**900**

Seventh Semester

PT B. Tech Course No	Equivalent B. Tech Course No	Name of subject	Credits	Weekly load, hours			C A Marks	Exam Duration Hrs	U E Max Marks	Total Marks
				L	T	D/P				
P 13.701	13.703	Gas Dynamics (M)	4	3	1	-	50	3	100	150
P 13.702	13.704	Refrigeration & Air conditioning (M)	4	3	1	-	50	3	100	150
P 13.703	13.705	Design of Machine Elements - II (M)	4	3	1	-	50	3	100	150
P 13.704	13.706	Elective III	4	3	1	-	50	3	100	150
P 13.705	13.707	Thermal Engineering Lab (M)	2	-	-	2	50	3	100	150
P 13.706	13.708	Mechanical Engineering Lab (M)	2	-	-	2	50	3	100	150
P 13.707	13.709	Project and Project Seminar (MPSU)	2	-	-	2	100	-		100
		Total	**22**	**12**	**4**	**6**	**400**		**600**	**1000**

Eighth Semester

PT B. Tech Course No	Equivalent B. Tech Course No	Name of subject	Credits	Weekly load, hours			C A Marks	Exam Duration Hrs	U E Max Marks	Total Marks
				L	T	D/P				
P 13.801	13.803	Automobile Engineering (M)	4	3	1	-	50	3	100	150
P 13.802	13.804	Computer Integrated Manufacturing (MU)	4	3	1	-	50	3	100	150
P 13.803	13.805	Elective IV	4	3	1	-	50	3	100	150
P 13.804	13.806	Elective V	4	3	1	-	50	3	100	150
P 13.805	13.807	Seminar (MPSU)	2	-	-	2	100	-	-	100
P 13.806	13.808	Project , Viva-Voce & Industrial Visit (MPSU)	5	-	-	5	100	-	100	200
		Total	**23**	**12**	**4**	**7**	**400**		**500**	**900**

Elective I

PT B. Tech Course No	Equivalent B. Tech Course No	Name of subject
P 13.503.1	13.506.1	Professional Ethics and Human Values (MPU)
P 13.503.2	13.506.2	Advanced Welding Technology (MPU)
P 13.503.3	13.506.3	Foundry Technology (MPU)
P 13.503.4	13.506.4	Advanced Fluid Mechanics (MPU)
P 13.503.5	13.506.5	Composite Materials Technology (MPU)
P 13.503.6	13.506.6	Non Destructive Testing (MPU)
P 13.503.7	13.506.7	Powder Metallurgy (MPU)
P 13.503.8	13.506.8	Human Aspects of Management (MP)
P 13.503.9	13.506.9	Environmental Science (MP)
P 13.503.10	13.506.10	Environmental Pollution Control (MP)
P 13.503.11	13.506.11	Disaster Management (MP)

13.606 Elective II

PT B. Tech Course No	Equivalent B. Tech Course No	Name of subject
P 13.604.1	13.606.1	Artificial Intelligence Systems (MPU)
P 13.604.2	13.606.2	Mechanical Working Methods (MPU)
P 13.604.3	13.606.3	System Modeling & Simulation (MPU)
P 13.604.4	13.606.4	Materials Handling (MPU)
P 13.604.5	13.606.5	Total Quality Management (MPU)
P 13.604.6	13.606.6	Advanced Manufacturing Processes (MPU)
P 13.604.7	13.606.7	Material Characterisation (MPU)
P 13.604.8	13.606.8	Micromachining Methods (MPU)
P 13.604.9	13.606.9	New Energy Systems (MP)
P 13.604.10	13.606.10	Object Oriented Programming (MP)
P 13.604.11	13.606.11	Nuclear Engineering (MP)
P 13.604.12	13.606.12	Instrumentation and Control (MP)
P 13.604.13	13.606.13	Precision Engineering (MP)
P 13.604.14	13.606.14	Advanced Mechanics of Solids (MP)
P 13.604.15	13.606.15	Tool Engineering (M)

Elective III

PT B. Tech Course No	Equivalent B. Tech Course No	Name of subject
P 13.704.1	13.706.1	Plant Engineering & Maintenance (MPU)
P 13.704.2	13.706.2	Fracture Mechanics (MPU)
P 13.704.3	13.706.3	Entrepreneurship Development (MPU)
P 13.704.4	13.706.4	Finite Element Methods (MPU)
P 13.704.5	13.706.5	Metal Forming (MPU)
P 13.704.6	13.706.6	Non-Conventional Machining Techniques (MPU)
P 13.704.7	13.706.7	Experimental Methods In Engineering (MPU)
P 13.704.8	13.706.8	Mechanical Vibration & Noise Control (MPU)
P 13.704.9	13.706.9	Failure Analysis (MPU)
P 13.704.10	13.706.10	Industrial Automation (MPU)
P 13.704.11	13.706.11	Advanced Thermodynamics (MP)
P 13.704.12	13.706.12	Industrial Heat Transfer (MP)
P 13.704.13	13.706.13	Computer Graphics (MP)
P 13.704.14	13.706.14	Marketing Management (MP)
P 13.704.15	13.706.15	Industrial Hydraulics (MP)
P 13.704.16	13.706.16	Machine Tool Technology (MP)
P 13.704.17	13.706.17	Turbo Machines (MP)
P 13.704.18	13.706.18	Bio Materials (MP)
P 13.704.19	13.706.19	Concurrent Engineering (MP)
P 13.704.20	13.706.20	Alternate Energy Sources (MP)

Elective IV

PT B. Tech Course No	Equivalent B. Tech Course No	Name of subject
P 13.803.1	13.805.1	Experimental Stress Analysis Techniques (MPU)
P 13.803.2	13.805.2	Aerospace Engineering (MPU)
P 13.803.3	13.805.3	Facilities Planning (MPU)
P 13.803.4	13.805.4	Design of Jigs And Fixtures (MPU)
P 13.803.5	13.805.5	Controls In Machine Tools (MPU)
P 13.803.6	13.805.6	Design of Pressure Vessels & Piping (MPU)
P 13.803.7	13.805.7	Tribology (MPU)
P 13.803.8	13.805.8	Cryogenic Engineering (MPU)
P 13.803.9	13.805.9	Research Methodology (MPU)
P 13.803.10	13.805.10	Nanotechnology (MPU)
P 13.803.11	13.805.11	Multiphase Flow (MP)

Elective IV (Contd..)

PT B. Tech Course No	Equivalent B. Tech Course No	Name of subject
P 13.803.12	13.805.12	Non Linear Dynamics and Chaos (MP)
P 13.803.13	13.805.13	Value Engineering (MP)
P 13.803.14	13.805.14	Continuum Mechanics (MP)
P 13.803.15	13.805.15	Industrial Safety Engineering (MP)
P 13.803.16	13.805.16	Engineering Design (MP)
P 13.803.17	13.805.17	Advanced Decision Modeling (MP)

13. 806 Elective V

PT B. Tech Course No	Equivalent B. Tech Course No	Name of subject
P 13.804.1	13.806.1	Industrial Quality Control (MPU)
P 13.804.2	13.806.2	Creativity & Product Development (MPU)
P 13.804.3	13.806.3	Advanced Kinematics of Machines (MPU)
P 13.804.4	13.806.4	Financial Management (MPU)
P 13.804.5	13.806.5	Flexible Manufacturing Methods (MPU)
P 13.804.6	13.806.6	Computational Fluid Dynamics (MPU)
P 13.804.7	13.806.7	Management Information Systems (MPU)
P 13.804.8	13.806.8	Production & Operations Management (MPU)
P 13.804.9	13.806.9	Project Management (MPU)
P 13.804.10	13.806.10	Robotics (MPU)
P 13.804.11	13.806.11	Industrial Refrigeration (MP)
P 13.804.12	13.806.12	Propulsion Engineering (MP)
P 13.804.13	13.806.13	Design of Heat Transfer Equipment (MP)
P 13.804.14	13.806.14	Technology Forecasting (MP)
P 13.804.15	13.806.15	Design of IC Engines (MP)
P 13.804.16	13.806.16	Logistics and Supply Chain Management (MP)
P 13.804.17	13.806.17	Surface Engineering (MP)
P 13.804.18	13.806.18	Supply Chain Management(MP)