B. TECH. COURSE STRUCTURE OF MECH.ENGG. DEPTT.

(*including* all interdisciplinary loads & Course codes)

(Effective from 2010-11)

MECHANICAL ENGINEERING

FIRST SEMESTER				**SECOND SEMESTER**			
Theory		**Contact Hrs.**	**CR**	**Theory**		**Contact Hrs.**	**CR**
Course Code	**Subject**	**L.T.P.**		**Course Code**	**Subject**	**L.T.P.**	
BMA 101	Mathematics - I	3-1-0	4	BMA 102	Mathematics - II	3-1-0	4
BPH 101/ BCH 101	Physics/Chemistry	3-1-0	4	BCH 101/ BPH 101	Chemistry/ Physics	3-1-0	4
BME 101/ BCS 101	Engg. Mechanics /Programming & Data Str.	3-1-0	4	BCS 101/ BME 101	Programming & Data Str. /Engg. Mechanics	3-1-0	4
BEE 101/ BEC 101	Basic Electrical Engg./ Basic Electronics	3-1-0	4	BEC 101/ BEE 101	Basic Electronics / Basic Electrical Engg.	3-1-0	4
BHU 101/ BCE 101	English for Communication /Environmental Science & Engg.	3-1-0	4	BCE 101/ BHU 101	Environmental Science & Engg./ English for Communication	3-1-0	4
			20				20
	Sessional				**Sessional**		
BPH 191/ BCH 191	Physics Lab./ Chemistry Lab.	0-0-3	2	BCH 191/ BPH 191	Chemistry Lab./ Physics Lab.	0-0-3	2
BHU 191/ BCS 191	Language Lab. / Programming Lab.	0-0-3	2	BCS 191/ BHU 191	Programming Lab. / Language Lab.	0-0-3	2
BCE 191 BME 191	Engg. Drg. /Workshop Practice – I	0-0-3	2	BME 191/ BCE 191	Workshop Practice - I /Engg. Drg.	0-0-3	2
BEE 191/ BEC 191	BEE Lab./BE Lab.	0-0-3	2	BEC 191/ BEE 191	BE Lab./BEE Lab.	0-0-3	2
EAA	Extra Academic Activity (NCC/NSS/Yoga)	0-0-3	0	EAA	Extra Academic Activity (NCC/NSS/Yoga)	0-0-3	0
			28				**28**

MECHANICAL ENGINEERING

THIRD SEMESTER				FOURTH SEMESTER			
Theory		**Contact Hrs.**	**CR**	**Theory**		**Contact Hrs.**	**CR**
Course Code	**Subject**	**L.T.P.**		**Course Code**	**Subject**	**L.T.P.**	
BMA	Mathematics –III (M)	3-1-0	4	BMA	Mathematics – IV (M)	3-1-0	4
BHU	Engg. Eco. & Costing. (M)	3-1-0	4	BHU	Organizational Behaviour (M)	3-1-0	4
BME202	Manufacturing Science & Technology-I (M)	3-1-0	4	BME205	Materials Engg. (M)	3-1-0	4
BME203	Mechanics of Solids(M)	3-1-0	4	BME206	Basic Thermodynamics(M)	3-1-0	4
BME204	Engineering Thermodynamics(E,EEE,MS)	3-1-0	4	BCS	Object Oriented Programming (M)	3-1-0	4
BEE	Elements of Electrical Machines(M)	3-1-0	4				
			20				20
	Sessional				**Sessional**		
BME291 BME292	Mechanics & Materials Testing Lab. (M,E,EEE) Materials Testing Lab. (C)	0-0-3	2	BME295	Internal Combustion Engine & Foundry Lab.(M)	0-0-3	2
BME293	M/c Drawing (M,MS)	0-0-3	2	BME296	Metallographic Study and Non Destructive Testing (M)	0-0-3	2
BEE	Electrical Machine Lab. (M)	0-0-3	2	BME297	Mech.Engg. Measurement Lab.(M)	0-0-3	2
				BME298	Thermal & Materials Testing Lab. (MS)	0-0-3	2
BME294	Workshop Practice – II (M)	0-0-3	2	BCS	Object Oriented Prog. Lab. (M)	0-0-3	2
			28				**28**

MECHANICAL ENGINEERING

FIFTH SEMESTER				**SIXTH SEMESTER**			
Theory		**Contact Hrs.**	**CR**	**Theory**		**Contact Hrs.**	**CR**
Course Code	**Subject**	**L.T.P.**		**Course Code**	**Subject**	**L.T.P.**	
BME307	Fundamentals of Fluid Mechanics (M)	3-1-0	4	BME313	Advanced Mechanics of Solids (M)	3-1-0	4
BME308	Fluid Mechanics & Fluid Power Engg. (MS)	3-1-0	4	BME314	Heat Transfer (M)	3-1-0	4
BME309	Machine Dynamics – I (M)	3-1-0	4	BME315	Fluid Dynamics & Hydraulic Machines (M)	3-1-0	4
BME310	Machine Design-I (M)	3-1-0	4	BME316	Industrial Engg. & Operation Research (M)	3-1-0	4
BME311	Manufacturing Science & Technology - II(M)	3-1-0	4	BME317	Machine Dynamics – II (M)	3-1-0	4
BME312	Metal Forming Processes (M)	3-1-0	4				
			20				20
	Sessional				**Sessional**		
BME391	Machine Dynamics & Fluid Mechanics Lab. (M)	0-0-3	2	BME396	Heat Power Lab. (M)	0-0-3	2
BME392	Production Engg. (Metal Cutting & Forming) Lab. (M)	0-0-3	2	BME397	Hydraulic Machines Lab. (M)	0-0-3	2
BME393	Heat Power & Hydraulics Machines Lab. – II(MS)	0-0-3	2				
BME394	Machine Design – I Sessional (M)	0-0-3	2	BME398	Advanced Production and Industrial Engg. Lab. (M)	0-0-3	2
BME395	Workshop Practice – III (M)	0-0-3	2	BME399	Production Design & Production Tooling (PDPT)Sessional (M)	0-0-3	2
			28				**28**

MECHANICAL ENGINEERING

SEVENTH SEMESTER				EIGHTH SEMESTER			
Theory		**Contact Hrs.**	**CR**	**Theory**		**Contact Hrs.**	**CR**
Course Code	**Subject**	**L.T.P.**		**Course Code**	**Subject**	**L.T.P.**	
BME 418	Machine Design – II (M)	3-1-0	4	BME 423	Internal Combustion Engine & Gas Turbine (M)	3-1-0	4
BME 419	Power Plant Engg. (M)	3-1-0	4				
BME 420	Metrology, Quality Control & Reliability (M)	3-1-0	4	BME 424	Mechanical Engg. Instrumentation and Control (M)	3-1-0	4
BME 421	Elective-I (M)	3-1-0	4				
BME 422 /BMS	Elective-II (M)	3-1-0	4	BME 425 /BMS	Elective-III (M)	3-1-0	4
				BME 426 /BEC	Elective-IV (M)	3-1-0	4
	Elective – I(Any one)				Elective – III(Any one)		
BME 421	(i)Refrigeration and Air Conditioning (M)			BME425	(i)Industrial Management(M)		
BME 421	(ii) Tribology (M)			BME 425	(ii)Entrepreneurship (M)		
BME 421	(iii)Composite Materials(M)			BME 425	(iii)Finite Element Method(M,MS)		
BME 421	(iv) Non-Conventional Energy(M)			BMS	(iv) Principles of Machine Tools (M,MS)		
				BMS	(v)Advanced Mfg. Technology(M,MS)		
	Elective – II(Any one)				Elective – IV(Any one)		
BME 422	(i)Operation Mgmt.(M)			BME 426	(i)Mechanical Vibration (M)		
BMS	(ii) Computer Aided Design & Computer Aided Manufacturing (M)			BME 426	(ii) Automobile Engg.(M)		
BME 422	(iii) Nano Technology(M)			BME 426	(iii)Intellectual Property Right (IPR)(M)		
BEC	(iv) Mechatronics(M)			BEC	(iv) Microprocessors & Micro Controller(M)		
	Sessional				**Sessional**		
BME 491	Heat Transfer, Ref. & A.C. Lab. (M)	0-0-3	2	BME 495	Comprehensive Viva-voce (M)	-	2
BME 492	Machine Design –II Sessional (M)	0-0-3	2				
BME 493	Seminar (M)	0-0-3	2	BME 496	Major Project (M)	0-0-3	6
BME 494	Minor Project (M)	0-0-3	2				
		15-5-12	**28**			**12-4-3**	**24**

M.TECH.(MECH.ENGG.) COURSE STRUCTURE

(EFFECTIVE FROM 2011-12)

A. MACHINE DESIGN & ANALYSIS

1st Year First Semester	**L-T-P**	**CR**	**1st Year Second Semester**	**L-T-P**	**CR**
Applied Elasticity and Plasticity	3-1-0	4	FEM in Engineering	3-1-0	4
Advance d Mechanics of Solids	3-1-0	4	Composite Materials	3-1-0	4
Machine Vibration Analysis	3-1-0	4	Experimental Stress Analysis	3-1-0	4
ELECTIVES (Any two)			**ELECTIVES (Any two)**		
1.Automatic Control Systems	3-1-0	4	1.Advanced Theory of Mechanisms and Machines	3-1-0	4
2.CAD and Computer Graphics	3-1-0	4	2.Product Design	3-1-0	4
3.Fatigue,Creep and Fracture	3-1-0	4	3.Tribology	3-1-0	4
4.Neural Networks and Artificial Intelligence	3-1-0	4	4.Engineering Design Optimization	3-1-0	4
5.Robotics and Flexible Manufacturing	3-1-0	4	5.Mechatronics	3-1-0	4
Engg. Software Lab.	0-0-3	2	Design Project of Mechanical Systems	0-0-3	2
Analysis and Design Engg.Lab.	0-0-3	2	Advanced Design Engg. Lab.	0-0-3	2
Seminar – I	0-0-3	2	Seminar – II	0-0-3	2
Comprehensive Viva-Voce - I		2	Comprehensive Viva-Voce – II		2
Total	**15-5-9**	**28**	**Total**	**15-5-9**	**28**

SECOND YEAR (3rd Semester)	**C**	**SECOND YEAR (4th Semester)**	**C**
Dissertation Interim Evaluation	10	Dissertation Open Defence	5
Comprehensive Viva-Voce	3	Dissertation Evaluation	20
Seminar on Dissertation(100)	2		

Total Credit : 96

B.HEAT POWER ENGINEERING

1ST Year (First Semester)	L-T-P	CR	1ST Year (Second Semester)	L-T-P	CR
Advance Engineering Thermodynamics	3-1-0	4	Convective Heat Transfer	3-1-0	4
Conduction and Radiation Heat Transfer	3-1-0	4	I.C.Engines	3-1-0	4
Fluid & Gas Dynamics	3-1-0	4	Experimental Techniques for Thermal Engineering	3-1-0	4
Elective (any Two)			Elective (any Two)		
1.Crogenic Technology	3-1-0	4	1.Air Conditioning Engineering	3-1-0	4
2.Solar Engineering	3-1-0	4	2.Thermal system Simulation and design.	3-1-0	4
3.Thermal power Plant	3-1-0	4	3.Combustion	3-1-0	4
4.Finite Element method	3-1-0	4	4.Numerical Heat Transfer.	3-1-0	4
5.Refrigeration Engineering.	3-1-0	4	5.Boiling, Condensation and Two Phase Flow	3-1-0	4
Engg. Software Lab.	0-0-3	2	Design Project of Heat Power System	0-0-3	2
Heat Power Engg. Lab	0-0-3	2	Advance Heat Power Lab	0-0-3	2
Seminar-I	0-0-3	2	Seminar-II	0-0-3	2
Comprehensive Viva-voce-I		2	Comprehensive Viva-voce-II		2
Total	15-5-9	28	Total	15-5-9	28
2nd Year (Third Semester)			2nd Year (Fourth Semester)		
Dissertation Interim Evaluation		10	Dissertation Open Defence		5
Comprehensive Viva-voce		3	Dissertation evaluation		20
Seminar on Dissertation		2			
Total Credit:					96

C.PRODUCTION ENGINEERING

1ST Year (First Semester)	L-T-P	CR	1ST Year (Second Semester)	L-T-P	CR
Theory of Plasticity and Metal Forming Process(MME-1111)	3-1-0	4	Industrial Engineering (MME-1211)	3-1-0	4
Advanced casting & Welding (MME-1112)	3-1-0	4	Non-Traditional Manufacturing Process (MME-1212)	3-1-0	4
Theory of Machining and Grinding (MME-1113)	3-1-0	4	Computer Aided Design and Manufacturing (MME-1213)	3-1-0	4
Electives (any Two)			Elective (any Two)		
1.Robotics and Felxible Manufacturing (MME-1114)	3-1-0	4	1.Tools and Dies Design (MME-1214)	3-1-0	4
2.Machine Tool Technology (MME-1115)	3-1-0	4	2.Finite Element Method(MME-1215)	3-1-0	4
3.Inspection and Quality Assurance (MME-1116)	3-1-0	4	3.Operation Management (MME-1216)	3-1-0	4
4.Mathematical Methods in Manufacturing (MME-1110)	3-1-0	4	4.Inventory System (MME-1217)	3-1-0	4
			5.Human Resource Management (MME-1218)	3-1-0	4
Seminar-I (MME-1183)	0-0-3	2	Seminar-II (MME-1283)	0-0-3	2
Manufacturing Engg. Lab.-I (MME-1181)	0-0-3	2	Manufacturing Engg. Lab.III (MME-1281)	0-0-3	2
Manufacturing Engg. Lab.-II (MME-1182)	0-0-3	2	Manufacturing Engg. Lab.-IV (MME-1282)	0-0-3	2
Comprehensive Viva-voce-I (MME-1184)		2	Comprehensive Viva-voce-II (MME-1284)		
Total	15-5-9	28	Total	15-5-9	28

2nd Year (Third Semester)	C	2nd Year (Fourth Semester)	C
Dissertation Interim Evaluation	10	Dissertation Open Defence	5
Comprehensive Viva-voce	3	Dissertation evaluation	20
Seminar on Dissertation	2		
Total Credit:			96