

SCHOOL OF ENGINEERING AND TECHNOLOGY
SRI PADMAVATI MAHILAVISVAIDYALAYAM
(WOMEN'S UNIVERSITY), TIRUPATI



Accredited by NAAC with 'A' Grade

B.Tech – Scheme of Evaluation – R20

Department of Mechanical Engineering

Effective from 2020-21

SCHEME OF INSTRUCTION AND EVALUATION OF B.TECH (ME)

DEPARTMENT OF MECHANICAL ENGINEERING

I YEAR – I SEMESTER (2020-21)

THEORY

S.No	Course Type	Course Code	Course Title	Hours per Week			Credits	Evaluation					Total Marks		
								Internal (30 Marks)		External (70 Marks)					
								Assignment	Test						
				L	T	P		Max. Marks	Duration	Max. Marks	Duration	Max. Marks			
1	BS	20BST04	Engineering Mathematics – 1	3	1	0	4	5	2	25	3	70	100		
2	BS	20BST03	Engineering Physics	3	1	0	4	5	2	25	3	70	100		
3	HUM	20BST01	Functional English	3	0	0	3	5	2	25	3	70	100		
4	ES	20ECT01	Basic Electronics Engineering	2	1	0	3	5	2	25	3	70	100		

PRACTICALS

S.No	Course Type	Course Code	Course Title	Hours per Week			Credits	Evaluation					Total Marks		
								Internal (40 Marks)		External (60 Marks)					
								Continuous	Test						
				L	T	P		Max. Marks	Duration	Max.	Duration	Max.			
5	BS	20BSP03	Engineering Physics Lab	0	0	2	1	20	2	20	3	60	100		
6	HUM	20BSP01	Communicative English Lab	0	0	2	1	20	2	20	3	60	100		
7	ES	20MEP03	Workshop and Manufacturing Practices	0	0	4	2	20	2	20	3	60	100		
8	ES	20ECP01	Basic Electronics Engineering Lab	0	0	2	1	20	2	20	3	60	100		

Total

11

3

10

19

800

SCHEME OF INSTRUCTION AND EVALUATION OF B.TECH (ME)

DEPARTMENT OF MECHANICAL ENGINEERING

I YEAR – II SEMESTER (2020-21)

THEORY

S.No	Course Type	Course Code	Course Title	Hours per Week			Credits	Evaluation					Total Marks		
								Internal (30 Marks)		External (70 Marks)					
								Assignment	Test						
				L	T	P		Max. Marks	Duration	Max. Marks	Duration	Max. Marks			
1	BS	20BST05	Engineering Mathematics – II	3	1	0	4	5	2	25	3	70	100		
2	BS	20BST02	Engineering Chemistry	3	1	0	4	5	2	25	3	70	100		
3	ES	20CST01	Programming for Problem Solving	2	1	0	3	5	2	25	3	70	100		
4	ES	20EET01	Basic Electrical Engineering	2	1	0	3	5	2	25	3	70	100		
5	MAN	20BST13	Essence of Indian Knowledge Tradition	3	0	0	Satisfactory / Not Satisfactory								
6	MAN		NCC/NSS	2 Hours			Satisfactory / Not Satisfactory								

PRACTICALS

S.No	Course Type	Course Code	Course Title	Hours per Week			Credits	Evaluation					Total Marks		
								Internal (40 Marks)		External (60 Marks)					
								Continuous	Test						
				L	T	P		Max. Marks	Duration	Max.	Duration	Max.			
7	BS	20BSP02	Engineering Chemistry Lab	0	0	2	1	20	2	20	3	60	100		
8	ES	20CSP01	Programming for Problem Solving Lab	0	0	4	2	20	2	20	3	60	100		
9	ES	20EEP01	Basic Electrical Engineering Lab	0	0	2	1	20	2	20	3	60	100		
10	ES	20MEP01	Engineering Graphics	0	0	6	3	20	2	20	3	60	100		
Total				13	4	14	21						800		

SCHEME OF INSTRUCTION AND EVALUATION OF B.TECH (ME)

DEPARTMENT OF MECHANICAL ENGINEERING

II YEAR – I SEMESTER (2020-21)

THEORY

S.No	Course Type	Course Code	Course Title	Hours per Week			Credits	Evaluation					Total Marks
								Internal (30 Marks)			External (70 Marks)		
								Assignment	Test				
				L	T	P		Max. Marks	Duration	Max. Marks	Duration	Max. Marks	
1	HUM	20BST08	Economics and Accountancy	3	1	0	4	5	2	25	3	70	100
2	PC	20MET02	Engineering Mechanics	3	1	0	4	5	2	25	3	70	100
3	PC	20MET01	Basic Thermodynamics	2	1	0	3	5	2	25	3	70	100
4	PC	20MET03	Material Science and Metallurgy	2	1	0	3	5	2	25	3	70	100
5	PC	20MET04	Machine Tools & Manufacturing Technology	2	1	0	3	5	2	25	3	70	100
6	MAN	20BST16	Universal Human values & Ethics	3	0	0	3	5	2	25	3	70	100
7	MAN		NCC/NSS	2 Hours			Satisfactory / Not Satisfactory						

PRACTICALS

S.No	Course Type	Course Code	Course Title	Hours per Week			Credits	Evaluation					Total Marks
								Internal (40 Marks)			External (60 Marks)		
								Continuous	Test				
				L	T	P		Max. Marks	Duration	Max.	Duration	Max.	
8	PC	20MEP02	Advanced Engineering Graphics	0	0	6	3	20	2	20	3	60	100
9	PC	20MEP04	Manufacturing Technology Lab	0	0	2	1	20	2	20	3	60	100
10	SC	20MES01	Skill Oriented Course 1	0	1	2	2	20	2	20	3	60	100
Total				15	6	10	26						900

SCHEME OF INSTRUCTION AND EVALUATION OF B.TECH (ME)

DEPARTMENT OF MECHANICAL ENGINEERING

II YEAR – II SEMESTER (2020-21)

THEORY

S.No	Course Type	Course Code	Course Title	Hours per Week			Credits	Evaluation					Total Marks
								Internal (30 Marks)		External (70 Marks)			
								Assignment	Test				
				L	T	P		Max. Marks	Duration	Max. Marks	Duration	Max. Marks	
1	BS	20BST07	Probability and Statistics	2	1	0	3	5	2	25	3	70	100
2	PC	20MET05	Design of Machine Members -I	3	0	0	3	5	2	25	3	70	100
3	PC	20MET06	Applied Thermodynamics	2	1	0	3	5	2	25	3	70	100
4	PC	20MET07	Strength of Materials	2	1	0	3	5	2	25	3	70	100
5	PC	20MET08	Fluid Mechanics & Hydraulic Machinery	2	1	0	3	5	2	25	3	70	100
6	MAN	20BST12	Environmental Studies	3	0	0	0	Satisfactory / Not Satisfactory					

PRACTICALS

S.No	Course Type	Course Code	Course Title	Hours per Week			Credits	Evaluation					Total Marks
								Internal (40 Marks)		External (60 Marks)			
								Continuous	Test				
				L	T	P		Max. Marks	Duration	Max.	Duration	Max.	
7	PC	20MEP06	Thermal Engineering Lab	0	0	2	1	20	2	20	3	60	100
8	PC	20MEP07	Strength of Materials & Material Science Lab	0	0	2	1	20	2	20	3	60	100
9	SC	20MES02	Skill Oriented Course 2	0	1	2	2	20	2	20	3	60	100
Total				14	5	6	19						800

SCHEME OF INSTRUCTION AND EVALUATION OF B.TECH (ME)

DEPARTMENT OF MECHANICAL ENGINEERING

III YEAR – I SEMESTER (2020-21)

THEORY

S.No	Course Type	Course Code	Course Title	Hours per Week			Credits	Evaluation					Total Marks
								Internal (30 Marks)		External (70 Marks)			
								Assignment	Test				
				L	T	P		Max. Marks	Duration	Max. Marks	Duration	Max. Marks	
1	HUM	20BST09	Industrial Management	3	0	0	3	5	2	25	3	70	100
2	PC	20MET09	Design of Machine Members-II	2	1	0	3	5	2	25	3	70	100
3	PC	20MET10	Heat Transfer	2	1	0	3	5	2	25	3	70	100
4	PC	20MET11	Kinematics of Machinery	2	1	0	3	5	2	25	3	70	100
5	PE		Elective –I	2	1	0	3	5	2	25	3	70	100
6	PE		Elective – II	2	1	0	3	5	2	25	3	70	100
7	MAN	20BST11	Constitution of India	3	0	0	0	Satisfactory / Not Satisfactory					

PRACTICALS

S.No	Course Type	Course Code	Course Title	Hours per Week			Credits	Evaluation					Total Marks
								Internal (40 Marks)		External (60 Marks)			
								Continuous	Test				
				L	T	P		Max. Marks	Duration	Max.	Duration	Max.	
8	PC	20MEP08	Fluid Mechanics& Hydraulic Machinery Lab	0	0	2	1	20	2	20	3	60	100
9	PC	20MEP09	Heat Transfer Lab	0	0	2	1	20	2	20	3	60	100
10	Intern	20MEI01	Internship-1	0	0	0	1	100	0	0	0	0	100
11	SC	20BSS01	Skill Oriented Course 3	0	1	2	2	20	2	20	3	60	100
Total				16	6	6	23						1000

SCHEME OF INSTRUCTION AND EVALUATION OF B.TECH (ME)

DEPARTMENT OF MECHANICAL ENGINEERING

III YEAR – II SEMESTER (2020-21)

THEORY

S.No	Course Type	Course Code	Course Title	Hours per Week			Credits	Evaluation					Total Marks
								Internal (30 Marks)		External (70 Marks)			
								Assignment	Test				
				L	T	P		Max. Marks	Duration	Max. Marks	Duration	Max. Marks	
1	PC	20MET12	Dynamics of Machinery	3	1	0	4	5	2	25	3	70	100
2	PC	20MET13	Operations Research	3	1	0	4	5	2	25	3	70	100
3	PC	20MET14	Mechanical Measurements & Metrology	2	1	0	3	5	2	25	3	70	100
4	OE		Open Elective –I	2	1	0	3	5	2	25	3	70	100
5	OE		Open Elective – II	2	1	0	3	5	2	25	3	70	100

PRACTICALS

S.No	Course Type	Course Code	Course Title	Hours per Week			Credits	Evaluation					Total Marks
								Internal (40 Marks)		External (60 Marks)			
								Continuous	Test				
				L	T	P		Max. Marks	Duration	Max.	Duration	Max.	
6	PC	20MEP10	Computer Aided Machine Drawing	0	0	6	3	20	2	20	3	60	100
7	PC	20MEP11	Machine Tools and Metrology Lab	0	0	2	1	20	2	20	3	60	100
8	SC	20MES03	Skill Oriented Course 4	0	1	2	2	20	2	20	3	60	100
Total				12	6	10	23						800

SCHEME OF INSTRUCTION AND EVALUATION OF B.TECH (ME)

DEPARTMENT OF MECHANICAL ENGINEERING

IV YEAR – I SEMESTER (2020-21)

THEORY

S.No	Course Type	Course Code	Course Title	Hours per Week			Credits	Evaluation					Total Marks
								Internal (30 Marks)		External (70 Marks)			
								Assignment	Test				
				L	T	P		Max. Marks	Duration	Max. Marks	Duration	Max. Marks	
1	PC	20MET15	CAD/CAM	2	1	0	3	5	2	25	3	70	100
2	PE		Elective – III	2	1	0	3	5	2	25	3	70	100
3	MC	20MEM01	Elective– IV (Mandatory MOOCs)	3	0	0	3	0	0	0	0	0	100
4	PE		Elective – V	2	1	0	3	5	2	25	3	70	100
5	OE		Open Elective – III	3	0	0	3	5	2	25	3	70	100

PRACTICALS

S.No	Course Type	Course Code	Course Title	Hours per Week			Credits	Evaluation					Total Marks
								Internal (40 Marks)		External (60 Marks)			
								Continuous	Test				
				L	T	P		Max. Marks	Duration	Max.	Duration	Max.	
6	PC	20MEP12	Machine Dynamics & Mechanical Measurements Lab	0	0	2	1	20	2	20	3	60	100
7	Intern	20MEI02	Internship-2	0	0	0	1	100	0	0	0	0	100
8	SC		Skill Oriented Course 5	0	1	2	2	20	2	20	3	60	100
Total				12	4	4	19						800

SCHEME OF INSTRUCTION AND EVALUATION OF B.TECH (ME)

DEPARTMENT OF MECHANICAL ENGINEERING

IV YEAR – II SEMESTER (2020-21)

PRACTICALS

S.No	Course Type	Course Code	Course Title	Hours per Week			Credits	Evaluation					Total Marks	
								Internal (40 Marks)		External (60 Marks)				
								Continuous	Test					
				L	T	P		Max. Marks	Duration	Max.	Duration	Max.		
1	PW	20MEJ01	Internship-3 cum Project Work	0	0	26	13	40	0	0	0	60	100	
Total				0	0	26	13						100	

SKILL ORIENTED COURSES

PRACTICALS

S.No	Year / Semester	Skill Oriented Course No.	Course Code	Course Title	Hours per Week			Credits	Evaluation					Total Marks
									Internal (40 Marks)			External (60 Marks)		
					Continuous Assessment	Test								
									Max. Marks	Duration	Max. Marks	Duration	Max. Marks	
1	II - I	SC1	20MES01	AUTOCAD 2D&3D Design	0	1	2	2	20	2	20	3	60	100
2	II - II	SC2	20MES02	MATLAB	0	1	2	2	20	2	20	3	60	100
3	III - I	SC3	20BSS01	Effective Communication skills	0	1	2	2	20	2	20	3	60	100
TRACK 1: ADVANCED DRAFTING AND ANALYSIS														
4	III - II	SC4	20MES03	Solid Works	0	1	2	2	20	2	20	3	60	100
5	IV - I	SC5	20MES04	FEA Software	0	1	2	2	20	2	20	3	60	100
TRACK 2: DESIGN & ANALYSIS														
6	III - II	SC4	20MES05	FUSION360	0	1	2	2	20	2	20	3	60	100
7	IV - I	SC5	20MES04	FEA Software	0	1	2	2	20	2	20	3	60	100
TRACK 3: Machine learning & Artificial Intelligence														
8	III - II	SC4	20CST13	Machine Learning	0	1	2	2	20	2	20	3	60	100
9	IV - I	SC5	20CST27	Artificial Intelligence	0	1	2	2	20	2	20	3	60	100
TRACK 4: CNC Part Programming and Robot Programming														
10	III - II	SC4	20MES07	CNC Part Programming	0	1	2	2	20	2	20	3	60	100
11	IV - I	SC5	20MES08	Robot Programming	0	1	2	2	20	2	20	3	60	100
Total					0	5	10	10						500

LIST OF ELECTIVES**ELECTIVE - I**

S. No	Course Code	Course Title
1	20MET18	Non Conventional Energy Sources
2	20MET19	Refrigeration & Air conditioning
3	20MET20	Fuels Combustion and Environment
4	20MET21	Gas Turbines and jet propulsion

ELECTIVE - II

S. No	Course Code	Course Title
1	20MET23	Robotics
2	20MET24	Automation in Manufacturing
3	20MET25	Mechanical Vibrations
4	20MET26	Modern Manufacturing Methods

ELECTIVE - III

S. No	Course Code	Course Title
1	20MET27	Finite Element Method
2	20MET28	Composite Materials
3	20MEP14	Design Thinking
4	20MET 29	Design for assembly and Manufacturing Fundamentals
5	20BST10	Design and Management of Small Enterprise

ELECTIVE – IV

S. No	Course Code	Course Title
1	20MEM01	Mandatory MOOCs

ELECTIVE – V

S. No	Course Code	Course Title
1	20MET30	Operations Management
2	20MET31	Non-linear Programming
3	20MET32	Work Study

LIST OF OPEN ELECTIVES OFFERED BY MECHANICAL ENGINEERING TO OTHER DEPARTMENTS (2020-21)**OPEN ELECTIVE - I**

S. No	Course Code	Course Title
1	20MET33	Power Plant Engineering
2	20MET34	Plant layout and Design
3	20MET35	Energy conservation and Management

OPEN ELECTIVE - II

S. No	Course Code	Course Title
1	20MEP13	Engineering Projects In Community Services
3	20MET36	Time and Motion Study
4	20MET37	Nano Technology

OPEN ELECTIVE – III

S. No	Course Code	Course Title
1	20MET38	Total Quality Management
2	20MET39	Supply Chain Management

LIST OF OPEN ELECTIVES OFFERED BY OTHER DEPARTMENTS TO MECHANICAL ENGINEERING (2020-21)

OPEN ELECTIVE - I			
S.No	Course Code	Course Title	Offering Department
1	20ECT27	Pulse and Digital Circuits	ECE
2	20ECT28	Electronic Measurements	
3	20EET28	Electrical Engineering Materials	EEE
4	20EET29	Energy Auditing and Demand Side Management	
5	20CST31	Introduction to C++ Programming	
6	20CSP13	Advanced Programming Lab	
7	20CST32	Fundamentals of Computer Organization	
8	20MUP01	Music Vocal	BS&H
9	20MUP02	Dance Bharatanatyam	
10	20MUP03	Dance Kuchipudi	

OPEN ELECTIVE - II			
S.No	Course Code	Course Title	Offering Department
1	20ECT29	Communication Systems	ECE
2	20ECT30	Microprocessors & Interfacing	
3	20ECT31	Digital Design using VHDL	
4	20EET30	Artificial Neural Networks	EEE
5	20EET31	Energy storage systems	
6	20CST33	Basics of Computer Networks	CSE
7	20CST34	Introduction to Cyber Security	
8	20CST35	Introduction to Cloud Computing	
9	20BST14	LSRW Skills	BS&H

OPEN ELECTIVE - III			
S.No	Course Code	Course Title	Offering Department
1	20ECT32	Microcontrollers & Interfacing	ECE
2	20ECT33	Basics of Embedded Systems	
3	20ECT34	Digital Image Processing	
4	20EET32	Conventional & Non-Conventional Energy Sources	EEE
5	20EET33	Design Costing of Electrical System	
6	20CST36	Introduction to Artificial Intelligence	CSE
7	20CST37	Introduction to Java Programming	
8	20CST38	Fundamentals of Internet of Things	
9	20BST15	Data Analytics for Decision Making	BS&H