B. Tech. 2nd Year (Semester - 3)

ME26021: Fluid Mechanics

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
ME26021	Fluid Mechanics	3	-	2	3	1	4	70	30	40	60	200

ARTICULATION MATRIX														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	1	1	-	-	-	1	-	-	-	-	-	3	2
CO2	3	2	2	2	-	-	2	-	-	-	-	-	3	1
CO3	3	1	1	-	-	-	1	-	-	-	-	-	2	1
CO4	3	2	2	2	-	-	-	-	-	-	-	-	2	1
Average	2	2	2	2	-	-	-	-	-	-	-	-	2	1

ME 26012 -Strength of Materials

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
ME26012	Strength of Materials	3	-	2	3	1	4	70	30	40	60	200

ARTICULATION MATRIX														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	–	–	–	–	–	2	2	2	–	1	3	1
CO2	3	3	–	–	–	–	–	2	2	2	–	1	3	1
CO3	3	3	–	–	–	–	–	2	2	2	–	1	3	1
CO4	–	–	–	–	–	–	–	–	–	–	–	–	–	–
CO5	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Average	3	3	–	–	–	–	–	2	2	2	–	1	3	1

MA26014 - Mathematics-III

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
MA26014	Mathematics-III	3	1	-	4	-	4	70	30	-	-	100

ARTICULATION MATRIX													
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	2	1	-	-	-	-	1	-	-	3	-	-
CO2	3	3	2	1	-	-	-	-	1	-	-	3	-	-
CO3	3	3	2	1	-	-	-	-	1	-	-	3	-	-
CO4	3	3	2	1	-	-	-	-	1	-	-	3	-	-
CO5	3	3	2	1	-	-	-	-	1	-	-	3	-	-
Average	3	3	2	1	-	-	-	-	1	-	-	3	-	-

ME26018 Materials Science

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
ME26018	Materials Science	3	-	2	3	1	4	70	30	40	60	200

ARTICULATION MATRIX													
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	-	3	2	-	-	3	1	2	-	2	1	1
CO2	3	3	2	3	-	-	-	3	2	2	-	2	3	2
CO3	3	3	3	3	2	3	-	3	2	2	-	2	2	3
CO4	3	3	2	3	-	1	-	1	1	1	-	2	1	1
CO5	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Average	3	3	2	3	2	2	–	2.5	1.5	1.75	–	2	1.75	1.75

ME26015: Engineering Thermodynamics

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
ME26015	Engineering Thermodynamics	3	-	2	3	1	4	70	30	40	60	200

ARTICULATION MATRIX														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	–	–	1	2	–		2	–	–	2	–
CO2	3	3	2	3	–	2	2	–	3	2	–	–	2	1
CO3	3	3	3	2	–		1	–	2	2	–	–	2	1
CO4	–	–	–	–	–	–	–	–	–	–	–	–	–	–
CO5	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Average	**3**	**3**	**3**	**2.5**	**–**	**1.5**	**2**	**–**	**2.5**	**2**	**–**	**–**	**2**	**1**

HU26481: Values, Humanities and Professional Ethics

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
HU26481	**Values, Humanities and Professional Ethics**	**-**	**2**	**-**	**2**	**-**	**2**	**100**	**-**	**-**	**-**	**100**

ARTICULATION MATRIX														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	–	1	–	–	–	2	1	2	–	1	–	1	1	1
CO2	1	1	–	–	–	2	–	3	1	2	–	2	1	–
CO3	1	–	–	1	–	2	–	3	1	1	–	1	1	1
CO4	1	1	2	1	–	3	2	3	1	1	–	3	2	1
CO5	1	1	2	–	1	2	3	2	2	1	–	2	1	1
Average	1.0	1.0	2.0	1.0	1.0	2.2	2.0	2.6	1.3	1.2	0.0	1.8	1.2	1.0

ME26501: Machine Design I

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
ME26501	Machine Design I	3	-	2	3	1	4	70	30	40	60	200

ARTICULATION MATRIX														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	1	1	-	-	-	-	-	-	-	3	3	3
CO2	3	3	3	1	-	-	-	-	-	1	-	3	3	3
CO3	3	3	3	1	-	-	-	-	-	1	-	3	3	3
CO4	3	3	3	1	-	-	-	-	-	1	-	3	3	3
CO5	3	3	3	1	-	-	-	-	-	1	-	3	3	3
Average	**3**	**3**	**2.6**	**1**	-	-	-	-	-	**1.00**	-	**3**	**3**	**3**

ME26512: Kinematics & Dynamics of Machine

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
ME26512	Kinematics & Dynamics of Machine	3	1	2	4	1	5	70	30	40	60	200

ARTICULATION MATRIX														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	2	–	–	–	–	–	–	–	–	3	3	1
CO2	3	3	2	–	–	–	–	–	–	–	–	3	3	1
CO3	3	2	2	–	–	–	–	–	–	–	–	3	3	1
CO4	3	2	2	–	–	–	–	–	–	–	–	3	3	1
CO5	3	2	2	–	–	–	–	–	–	–	–	3	3	1
Average	**3**	**2.2**	**2**	–	–	–	–	–	–	–	–	**3**	**3**	**1**

ME26504: Measurement and Control System

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
ME26504	Measurement and Control System	3	-	2	3	1	4	70	30	40	60	200

ARTICULATION MATRIX														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	–	–	–	–	–	–	–	–	–	–	1	1	1
CO2	3	3	3	–	–	–	–	–	–	–	–	1	1	1
CO3	3	2	3	1	–	–	–	–	–	–	–	1	1	1
CO4	3	3	3	–	–	–	–	–	–	–	–	1	2	1
CO5	3	2	2	1	–	–	–	–	–	–	–	–	–	–
Average	3	2.5	2.75	1	–	–	–	–	–	–	–	1	1.25	1

IP26513: Manufacturing Processes-I

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
IP26513	Manufacturing Processes-I	3	-	2	3	1	4	70	30	40	60	200

ARTICULATION MATRIX														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	–	2	–	2	2	2	–	–	–	–	3	–	2
CO2	3	2	2	2	2	2	–	2	–	–	–	3	3	3
CO3	3	2	2	2	2	2	–	–	2	–	2	3	3	3
CO4	3	2	3	2	2	2	–	–	–	2	–	3	3	3
CO5	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Average	2.75	2	2.25	2	2	2	2	2	2	2	2	3	3	2.75

HU26507: Economics for Engineers

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
HU26507	Economics For Engineers	3	-	-	3	-		70	30	-	-	100

ARTICULATION MATRIX														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	–	–	–	–	–	–	–	–	–	–	2	–	2	1
CO2	–	–	–	–	–	–	–	–	–	–	3	–	2	1
CO3	–	–	–	–	–	–	–	–	–	–	3	–	2	1
CO4	–	–	–	–	–	–	–	–	–	–	2	–	2	1
CO5	–	–	–	–	–	–	–	–	–	–	3	–	2	1
Average	–	–	–	–	–	–	–	–	–	–	**2.6**	–	**2**	**1**

B. Tech. 3rd Year (Semester –5)

ME36009: Computer Aided Design

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
ME36009	Computer Aided Design	3	-	2	3	1	4	70	30	40	60	200

ARTICULATION MATRIX													
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	2	2	3	-	1	1	3	1	1	3	3	2
CO2	3	2	3	1	3	-	-	-	2	1	1	3	1	2
CO3	3	3	3	3	3	1	-	1	3	1	1	3	2	3
CO4	2	2	2	2	3	-	1	-	3	3	1	3	2	3
Average	2.8	2.4	2.6	2.2	3	1	1	1	2.8	1.8	1.2	3	2	2.6

ME36010: Mechatronics and Automation

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
ME3610	Mechatronics and Automation	3	-	-	3	-	3	70	30	-	-	100

ARTICULATION MATRIX													
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	2	2	-	2	-	-	-	-	-	-	2	2	2
CO2	2	3	3	2	2	-	-	-	-	-	-	1	3	2
CO3	2	1	-	-	-	-	-	-	-	-	-	1	3	-
CO4	2	2	2	-	-	-	-	-	-	-	-	2	2	-
CO5	2	-	-	-	-	-	-	-	-	-	-	1	2	-
Average	2	2	2.333	2	2	-	-	-	-	-	-	1.4	2.4	2

ME36011: Heat Transfer

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
ME36011	Heat Transfer	3	-	2	3	1	4	70	30	40	60	200

ARTICULATION MATRIX														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	3	1	2	–	–	–	–	–	3	3
CO2	3	3	3	3	2	–	–	–	–	–	–	–	3	3
CO3	3	3	3	3	3	–	–	–	–	–	–	–	3	3
CO4	3	3	3	3	3	–	1	–	–	–	–	–	3	3
CO5	3	3	3	3	–	–	–	–	–	–	–	–	3	3
Average	3	3	3	3	2.75	1	1.5	–	–	–	–	–	3	3

ME 36007: Steam and Gas Power Systems

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
ME 36007	Steam and Gas Power Systems	3	-	-	3	-	3	70	30	-	-	100

ARTICULATION MATRIX														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	2	–	–	–	–	–	–	–	–	3	3	1
CO2	3	3	2	–	–	–	–	–	–	–	–	3	3	1
CO3	3	3	2	–	–	–	–	–	–	–	–	3	3	1
CO4	3	3	2	–	–	–	–	–	–	–	–	3	3	1
CO5	3	3	2	–	–	–	–	–	–	–	–	3	3	1
Average	3	3	2	–	–	–	–	–	–	–	–	3	3	1

IP36052: Manufacturing Processes-II

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
IP36062	Manufacturing Processes-II	3	-	2	3	1	4	70	30	40	60	200

ARTICULATION MATRIX														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	–	2	–	2	2	2	–	–	–	–	2	–	2
CO2	3	2	2	2	2	2	–	2	–	–	–	2	3	3
CO3	3	2	2	2	2	2	–	–	2	–	2	2	3	3
CO4	3	2	3	2	2	2	–	–	–	2	–	2	3	3
CO5	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Average	2.75	2	2.25	2	2	2	2	2	2	2	2	2	3	2.75

B. Tech. 3rd Year (Semester – 6)

ME36511: Refrigeration & Air Conditioning

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
ME36511	Refrigeration & Air Conditioning	3	-	2	3	1	4	70	30	40	60	200

ARTICULATION MATRIX														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	2	2	-		-	-	-	-	-	2	3	1
CO2	3	3	2	3	-		1	-	-	-	-	2	3	1
CO3	3	2	2	2	-		-	-	-	-	-	2	3	1
CO4	3	3	2	2	-		-	-	-	-	-	2	3	1
CO5	3	3	2	2	-		-	-	-	-	-	2	3	1
Average	3	2.8	2	2.2	-	-	1	-	-	-	-	2	3	1

ME36513: Machine Design – II

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
ME36513	Machine Design – II	3	-	4	3	2	5	70	30	40	60	200

ARTICULATION MATRIX														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3			2					2	3	1
CO2	3	3	3	3	1							2	3	1
CO3	3	3	3	3	1							2	3	1
CO4	3	3	3	3	1							2	3	1
CO5	3	3	3	3	2							2	3	1
Average	**3**	**3**	**3**	**3**	**1.25**		**2**					**2**	**3**	**1**

ME36516: Fluid Machinery

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
ME36516	Fluid Machinery	3	-	2	3	1	4	70	30	40	60	200

ARTICULATION MATRIX														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	2	3	1	-	-	-	2	-	-	2	3	2
CO2	3	2	2	3	1	-	-	-	2	-	-	2	3	2
CO3	3	2	2	3	3	-	-	-	2	-	-	2	3	1
CO4	3	2	2	2	1	-	-	-	-	-	-	2	3	1
CO5	3	3	3	2	-	-	-	-	-	-	-	2	3	2
Average	**3**	**2.2**	**2.2**	**2.6**	**1.5**	-	-	-	**2**	-	-	**2**	**3**	**1.6**

ME36519: Internal Combustion Engines

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
ME36519	Internal Combustion Engines	3	-	2	3	1	4	70	30	40	60	200

ARTICULATION MATRIX														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3			2					2	3	1
CO2	3	3	3	3	1							2	3	1
CO3	3	3	3	3	1							2	3	1
CO4	3	3	3	3	1							2	3	1
CO5	3	3	3	3	2							2	3	1
Average	3	3	3	3	1.25		2					2	3	1

IP36504: Industrial Engineering and Production Management

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
IP36504	Industrial Engineering and Production Management	3	-	-	3	-	70	30	-	-	100	IP36504

ARTICULATION MATRIX														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	2	–	–	–	–	–	–	–	–	1	3	1
CO2	3	3	2	–	–	–	–	–	–	–	–	1	3	1
CO3	3	2	2	–	–	–	–	–	–	–	–	1	3	1
CO4	3	2	2	–	–	–	–	–	–	–	–	1	3	1
CO5	3	2	2	–	–	–	–	–	–	–	–	1	3	1
Average	3	2.2	2	–	–	–	–	–	–	–	–	1	3	1

ME46018: Automobile Engineering

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
ME 46018	Automobile Engineering	3	-	2	3	1	4	70	30	40	60	200

ARTICULATION MATRIX														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3.0	3.0	2.0	–	–	–	–	–	–	–	–	1.0	–	2.0
CO2	3.0	3.0	–	–	–	–	–	–	–	–	–	1.0	–	1.0
CO3	3.0	3.0	2.0	–	–	–	–	–	–	–	–	1.0	1.0	1.0
CO4	3.0	3.0	1.0	–	–	–	–	–	–	–	–	1.0	2.0	1.0
CO5	3.0	3.0	–	–	–	–	–	–	–	–	–	1.0		1.0
Average	**3.0**	**3.0**	**1.7**	–	–	–	–	–	–	–	–	**1.0**	**1.5**	**1.2**

B. Tech. 4th Year (Semester – 7)

ME46051: Vibration & Noise Control

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
ME 46051	Vibration & Noise Control	3	-	2	3	1	4	70	30	40	60	200

ARTICULATION MATRIX													
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	2	–	–	–	–	–	–	–	–	1	2	2
CO2	3	3	2	–	–	–	–	–	–	–	–	1	2	2
CO3	3	3	2	–	–	–	–	–	–	–	–	1	2	2
CO4	3	3	2	2	1	–	2	–	–	–	–	1	2	2
CO5	3	3	2	–	1	3	2	–	–	–	–	1	2	2
Average	**3**	**3**	**2**	**2**	**1**	**3**	**2**	–	–	–	–	**1**	**2**	**2**

ME46020: Computer Aided Design

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
ME46020	Computer Aided Design	3	-	2	3	1	4	70	30	40	60	200

ARTICULATION MATRIX													
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	2	2	3	-	1	1	3	1	1	3	3	2
CO2	3	2	3	1	3	-	-	-	2	1	1	3	1	2
CO3	3	3	3	3	3	1	-	1	3	1	1	3	2	3
CO4	2	2	2	2	3	-	1	-	3	3	1	3	2	3
Average	2.8	2.4	2.6	2.2	3	1	1	1	2.8	1.8	1.2	3	2	2.6

ME46218: Mechatronics and Automation

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
ME46218	Mechatronics and Automation	3	-	-	3	-	3	70	30	-	-	100

ARTICULATION MATRIX														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	2	2	-	2	-	-	-	-	-	-	2	2	2
CO2	2	3	3	2	2	-	-	-	-	-	-	1	3	2
CO3	2	1	-	-	-	-	-	-	-	-	-	1	3	-
CO4	2	2	2	-	-	-	-	-	-	-	-	2	2	-
CO5	2	-	-	-	-	-	-	-	-	-	-	1	2	-
Average	2	2	2.333	2	2	-	-	-	-	-	-	1.4	2.4	2

ME46219: Advanced Machine Design

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
ME 46219	Advanced Machine Design	3	-	-	3	-	3	70	30	-	-	100

ARTICULATION MATRIX														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	2	–	–	–	–	–	–	–	–	1	3	1
CO2	3	3	2	–	–	–	–	–	–	–	–	1	3	1
CO3	3	2	2	–	–	–	–	–	–	–	–	1	3	1
CO4	3	2	2	–	–	–	–	–	–	–	–	1	3	1
CO5	3	2	2	–	–	–	–	–	–	–	–	1	3	1
Average	3	2.2	2	–	–	–	–	–	–	–	–	1	3	1

ME46220: Industrial Tribology and Maintenance

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
ME46220	Industrial Tribology and Maintenance	3	-	-	3	-	3	70	30	-	-	100

ARTICULATION MATRIX														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	1	–	1	–	2	–	–	–	–	1	3	2
CO2	3	2	1	–	1	2	2	–	–	–	–	1	3	2
CO3	3	2	2	–	2	2	–	–	–	–	–	–	3	1
CO4	3	1	2	–	1	–	–	–	–	–	–	–	3	1
CO5	3	2	1	–	1	–	–	–	–	–	–	–	3	2
Average	3	1.8	1.4	–	1.2	2	2	–	–	–	–	1	3	1.6

ME46xx: Design of Air Conditioning Equipment

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
ME 46xxx	Design of Air Conditioning Equipment	3	-	-	3	-	3	70	30	-	-	3

ARTICULATION MATRIX														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	1	–	1	–	–	–	–	–	–	1	3	2
CO2	3	2	1	–	1	–	–	–	–	–	–	1	3	2
CO3	3	1	1	–	1	–	–	–	–	–	–	–	3	1
CO4	3	1	2	–	1	–	–	–	–	–	–	–	3	1
CO5	3	2	1	–	1	–	–	–	–	–	–	–	3	2
Average	3	1.6	1.2	–	1	–	–	–	–	–	–	1	3	1.6

IP 46316: Operations Research

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
IP 46316	Operations Research	3	0	0	3	-	70	70	30	-	-	100

ARTICULATION MATRIX														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	3	–	1	1	–	–	–	–	1	1	2	2	1
CO2	2	3	–	1	1	–	–	–	1	1	1	1	2	1
CO3	2	3	–	1	1	–	–	–	1	1	2	2	2	1
CO4	2	3	–	1	1	–	–	–	-	1	2	1	2	1
CO5	2	3	–	1	1	–	–	–	1	1	1.5	1.5	2	1
Average	2	3	–	1	1	–	–	–	1	1	1.5	1.5	2	1

ME46315 Hydraulic, Pneumatic & Fluidic Control

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
ME 46315	Hydraulic, Pneumatic & Fluidic Control	3	-	-	3	-	3	70	30	-	-	100

ARTICULATION MATRIX														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	1	1	-	-	-	-	-	-	-	-	-	-	-
CO2	3	2	2	2	1	-	-	-	-	-	-	-	-	-
CO3	3	1	1	-	-	-	-	-	-	-	-	-	-	-
CO4	3	2	2	2	1	-	-	-	-	-	-	-	-	-
CO5	2	2	2	2	1	-	-	-	-	-	-	-	-	-
Average	2.8	1.6	1.6	2	1	–	–	–	–	–	–	-	-	-

ME 46xxx Bio Mechanics

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
ME 46xxx	Bio Mechanics	3	-	-	3	-	3	70	30	0	0	100

ARTICULATION MATRIX													
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	1	1	1	1	-	-	-	-	-	-	-	3	2
CO2	3	2	2	2	1	-	-	-	-	-	-	-	3	2
CO3	3	1	1	-	-	-	-	-	-	-	-	-	3	1
CO4	3	2	2	2	1	-	-	-	-	-	-	-	3	1
CO5	2	2	2	2	1	-	-	-	-	-	-	-	3	1
Average	2.8	1.6	1.6	1.75	1	-	-	-	-	-	-	-	3	1.4

ME: Manufacturing Automation & CAM

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
ME	Manufacturing Automation & CAM	3	-	-	3	-	3	70	30	-	-	100

ARTICULATION MATRIX													
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	2	-	-	1	2	-	-	-	-	-	3	2
CO2	3	3	2	2	2	-		-	-	-	-	-	3	2
CO3	2	2	3	2	3	-	-	-	2	2	1	1	3	3
CO4	2	2	2		2	-	-	-	-	-	-	1	2	2
CO5	2	3		2	2	-	-	-	-	2	-	2	3	2
Average	2.4	2.4	2.25	2	2.2	1.0	2	-	2	2	1	1.5	2.8	2.2

ME46327: Data Science and Machine Learning

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
ME46327	Data Science and Machine Learning	3	-	-	3	-	3	70	30	-	-	100

ARTICULATION MATRIX														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	–	–	1	–	–	–	–	–	–	1	1	1
CO2	3	2	–	–	1	–	–	–	–	–	–	1	1	1
CO3	3	2	–	2	1	–	–	–	–	–	–	1	1	1
CO4	3	2	2	–	1	–	–	–	–	–	–	1	2	1
CO5	3	2	1	–	1	–	–	–	–	–	–	1	2	1
Average	3	2	1.5	2	1	–	–	–	–	–	–	1	1.4	1

ME 46314: Power Plant & Energy Management

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
ME 46314	Power Plant & Energy Management	3	-	-	3	-	3	70	30	-	-	100

ARTICULATION MATRIX														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	–	1	1	–	–	–	–	–	–	2	2	1
CO2	3	2	–	1	1	–	–	–	–	–	–	2	2	1
CO3	3	2	–	2	1	–	–	–	–	–	–	1	2	1
CO4	3	2	2	–	1	–	–	–	–	–	–	1	2	1
CO5	3	2	1	–	1	–	–	–	–	–	–	1	2	1
Average	3	2	1.5	1.33	1	–	–	–	–	–	–	1.4	2	1

B. Tech. 4th Year (Semester – 8)

ME46667: Composite Materials

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
ME 46667	Composite Materials	3	-	-	3	-	3	70	30	-	-	100

ARTICULATION MATRIX														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	1	1	1	–	–	–	–	–	–	1	2	1
CO2	3	2	1	1	1	–	–	–	–	–	–	1	2	1
CO3	3	2	1	1	1	–	–	–	–	–	–	1	2	1
CO4	3	2	1	–	–	–	–	–	–	–	–	1	2	1
CO5	3	2	1	–	–	–	–	–	–	–	–	1	2	1
Average	3	2	1	1	1	–	–	–	–	–	–	1	2	1

ME 46668: Renewable Energy Sources

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
ME 46668	Renewable Energy Sources	3	-	-	3	-	3	70	30	-	-	100

ARTICULATION MATRIX														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	1	2	–	–	2	2	–	–	–	–	–	3	1
CO2	3	2	2	2	1	–	–	–	–	–	–	–	3	1
CO3	3	1	1	–	2	2	–	–	–	–	–	–	3	1
CO4	3	1	–	–	2	2	2	–	–	–	–	–	3	1
CO5	3	–	–	–	–	1	1	–	–	–	–	–	3	1
Average	3	1	2	–	–	2	2	–	–	–	–	–	3	1

IP46669: Industrial Inspection & Quality Control

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
IP46669	Industrial Inspection And Quality Control	3	0	0	3	-	3	70	30	-	-	100

ARTICULATION MATRIX														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2												
CO2	3	3		2	3									
CO3	3	3	2					2						
CO4	3	3		3	2									
CO5	3	3	2	2	2									
Average	3	2.8	2	2.3333	2.3333	0	0	2	0	0	0	0	0	0

ME46670: Finite Element Method

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
ME 46670	Finite Element Method	3	-	-	3	-	3	70	30	-	-	100

ARTICULATION MATRIX														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	1	1	1	1	–	–	–	–	–	–	1	1
CO2	3	2	1	1	1	1	–	–	–	–	–	–	1	1
CO3	3	2	1	1	1	1	–	–	–	–	–	–	1	1
CO4	3	2	1	–	–	–	–	–	–	–	–	–	1	1
CO5	3	2	1	1	–	–	–	–	–	–	–	–	1	1
Average	3	2	1	1	1	1	–	–	–	–	–	–	1	1

ME46672: Robotics

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
ME46672	Robotics	3	-	-	3	-	3	70	30	-	-	100

ARTICULATION MATRIX													
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	1	1	–	1	1	–	–	–	–	–	2	1
CO2	3	2	1	1	–	–	–	–	–	–	–	–	2	1
CO3	3	1	1	–	–	–	–	–	–	–	–	–	1	1
CO4	3	1	1	–	–	–	–	–	–	–	–	–	1	1
CO5	3	1	1	–	–	–	–	–	–	–	–	–	1	1
Average	3	1.4	1	1	–	1	1	–	–	–	–	–	1.4	1

ME46673: Rotor Dynamics

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
ME 46671	Rotor Dynamics	3	0	0	3	-	3	70	30	-	-	100

ARTICULATION MATRIX													
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	2	0	0	0	0	0	0	0	0	0	0	0
CO2	3	3	2	0	0	0	0	0	0	0	0	0	0	0
CO3	3	3	3	2	0	0	0	0	0	0	0	0	0	0
CO4	2	2	3	2	3	0	0	0	0	0	0	0	0	0
CO5	2	2	0	3	3	0	0	0	0	0	0	0	0	0
Average	2.6	2.6	2	1.4	1.2	0	0	0	0	0	0	0	0	0

ME 46671: Artificial Intelligence

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
XX 46671	Artificial Intelligence	3	-	-	3	-	3	70	30	-	-	100

PRE-REQUISITES: Mathematics, Basic Computer science

ARTICULATION MATRIX														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	1	2	1	1	2	–	–	–	–	1	3	2
CO2	3	2	1	2	2	2	2	–	–	–	–	1	3	2
CO3	3	2	1	–	2	2	–	–	–	–	–	–	3	1
CO4	3	2	1	–	1	1	–	–	–	–	–	–	3	1
CO5	3	2	1	–	1	–	–	–	–	–	–	–	3	2

ME46708: Gas Dynamics & Fluid Flow

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
XX 46708	Gas Dynamics & Fluid Flow	3	-	-	3	-	3	70	30	-	-	100

ARTICULATION MATRIX														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	1	2	1	-	-	-	-	-	-	-	2	1
CO2	3	2	2	1	-	-	-	-	-	-	-	-	2	1
CO3	3	2	1	2	-	-	-	-	-	-	-	-	2	1
Average	3	2	1	2	1	0	0	0	0	0	0	0	2	1

ME46705: Engineering Optimization

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
ME46705	Engineering Optimization	3	-	-	3	-	3	70	30	-	-	100

ARTICULATION MATRIX														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	1	2	–	1	1	–	–	–	–	–	2	1
CO2	3	2	1	2	–	1	1	–	–	–	–	–	2	1
CO3	3	1	1	1	–	1	1	–	–	–	–	–	2	1
CO4	3	1	1	1	–	–	–	–	–	–	–	–	2	1
CO5	3	1	1	1	–	–	–	–	–	–	–	–	2	1
Average	3	1.4	1	1.4	–	1	1	–	–	–	–	–	2	1

ME46704: Design of Thermal Systems

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
ME 46704	Design of Thermal Systems	3	-	-	3	-	3	70	30	-	-	100

ARTICULATION MATRIX														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	1	2	1	-	-	-	-	-	-	-	3	2
CO2	3	3	2	1	-	-	-	-	-	-	-	-	3	2
CO3	3	3	2	3	-	-	-	-	-	-	-	-	3	2
CO4	3	3	2	2	-	-	-	-	-	-	-	-	3	2
CO5	3	1	1	1	1	2	1	-	-	-	-	-	3	2
Average	3	2.6	1.6	1.8	1	2	1	-	-	-	-	-	3	2

ME 46707: Computational Fluid Dynamics

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
ME 46707	Computational Fluid Dynamics	3	-	-	3	-	3	70	30	-	-	100

ARTICULATION MATRIX													
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	2	2	-	-	-	-	-	-	-	-	-	-
CO2	3	3	2	-	-	-	-	-	-	-	-	-	-	-
CO3	3	2	3	-	3	-	-	-	-	-	-	-	-	-
Average	3	2	2	2	3	0	0	0	0	0	0	0	0	0

ME46706: 3D Printing and Design

CODE	SUBJECT NAME	Hours per Week			Credits			Maximum Marks				
								Theory		Practical		Total
		L	T	P	T	P	Total	Th.	CW	SW	Pr.	
XX 46706	3D Printing And Design	3	-	-	3	-	3	70	30	-	-	100

ARTICULATION MATRIX													
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	2	–	3	–	–	–	–	–	–	1	3	2
CO2	3	2	3	–	–	–	–	–	–	–	–	1	3	2
CO3	3	2	3	–	–	–	1	–	–	–	–	1	3	2
CO4	3	3	2	–	–	–	–	–	–	–	–	1	3	2
CO5	3	2	2	–	3	–	–	–	–	–	–	1	3	2
Average	3	2.2	2.4	–	3	–	1	–	–	–	–	1	3	2