

**Madanapalle Institute of Technology & Science**  
**Department of Mechanical Engineering**  
**Program Articulation matrix Showing the strength of Contribution of Courses to Attainment of Pos/PSOs**  
**PO\_Assessment (17-21 batch)**

Course code	Name	Direct attainment							Indirect attainment							Combined							Attainment Levels							
		CO1	CO2	CO3	CO4	CO5	CO6	CO7	CO1	CO2	CO3	CO4	CO5	CO6	CO7	CO1	CO2	CO3	CO4	CO5	CO6	CO7	CO1	CO2	CO3	CO4	CO5	CO6	CO7	
1 14MAT103	DIFFERENTIAL EQUATIONS & LAPLACE TRANSFORMS								0.75	0.74	0.74	0.74	0.75																	
2 14HUM301	PRINCIPLES OF ECONOMICS								0.75	0.74	0.74	0.74	0.75																	
3 14ME102	MECHANICS OF SOLIDS	0.65	0.76	0.83	0.68	0.67	0.57		0.66	0.65	0.66	0.65	0.65	0.66																
4 14ME103	KINEMATICS OF MACHINERY	0.76	0.79	0.58	0.52	0.64			0.74	0.72	0.76	0.72	0.74																	
5 14ME104	THERMODYNAMICS	0.54	0.72	0.66	0.69	0.49			0.75	0.73	0.72	0.72	0.73	0.74																
6 14ME105	MATERIAL SCIENCE AND ENGINEERING	0.74	0.76	0.75	0.70	0.54			0.76	0.78	0.74	0.75	0.76																	
7 14ME202	MECHANICS OF SOLIDS & MATERIAL SCIENCE PRACTICALS	0.96	0.96	0.96	0.96	0.98			0.74	0.74	0.74	0.74	0.74																	
8 14ME203	MACHINE DRAWING LAB	0.97	0.97	0.97	0.97	0.97			0.77	0.77	0.77	0.77	0.77																	
9 14MAT304	Probability & Statistics								0.76	0.75	0.74	0.76	0.76																	
10 14ME106	Fluid Mechanics	0.64	0.68	0.56	0.48	0.36	0.32		0.71	0.69	0.73	0.76	0.76	0.77																
11 14ME107	Machine Design - I	0.64	0.74	0.74	0.81	0.67			0.72	0.72	0.71	0.76	0.77																	
12 14ME108	Dynamics of Machinery	0.62	0.61	0.58	0.73	0.51	0.30		0.76	0.73	0.75	0.62	0.88	0.88																
13 14ME109	Applied Thermodynamics	0.66	0.65	0.75	0.73	0.53	0.78		0.74	0.72	0.75	0.76	0.87	0.88																
14 14ME110	Production Techniques - I	0.75	0.75	0.75	0.75	0.75			0.61	0.61	0.60	0.62	0.61																	
15 14ME204	Production Techniques Practical - I	0.98	0.98	0.98	0.98	0.98			0.80	0.80	0.80	0.80	0.80																	
16 14ME205	Dynamics Lab & Electrical Machines Practicals	0.85	0.85	0.85	0.85	0.85	0.85		0.77	0.77	0.77	0.77	0.77	0.76																
	Avg	0.75	0.79	0.77	0.76	0.69	0.56		0.74	0.73	0.73	0.73	0.76	0.78																

  
**Head of the Department**  
**Mechanical Engineering**  
**Madanapalle Institute of Technology & Science**  
**MADANAPALLE - 517 325**

Madanapalle Institute of Technology & Science

Department of Mechanical Engineering

Program Articulation matrix Showing the strength of Contribution of Courses to Attainment of POs/PSOs

PO\_Assessment (16-20 batch)

Course code	Name	Direct attainment							Indirect attainment							Combined							Attainment Levels							
		CO1	CO2	CO3	CO4	CO5	CO6	CO7	CO1	CO2	CO3	CO4	CO5	CO6	CO7	CO1	CO2	CO3	CO4	CO5	CO6	CO7	CO1	CO2	CO3	CO4	CO5	CO6	CO7	
1 14MAT203	DIFFERENTIAL EQUATIONS & LAPLACE TRANSFORMS	0.77	0.57	0.81	0.86	0.82			0.75	0.74	0.74	0.74	0.75		0.77	0.60	0.80	0.84	0.81				2	1	3	3	3	-	-	
2 14HUM201	PRINCIPLES OF ECONOMICS	0.90	0.90	0.83	0.85	0.82			0.75	0.74	0.74	0.74	0.75		0.83	0.79	0.68	0.79	0.74				3	2	1	2	2	-	-	
3 14ME102	MECHANICS OF SOLIDS	0.75	0.80	0.80	0.63	0.69	0.77		0.66	0.65	0.66	0.65	0.65	0.66	0.73	0.77	0.77	0.69	0.68	0.75			2	2	2	1	1	2	-	
4 14ME103	KINEMATICS OF MACHINERY	0.78	0.80	0.86	0.80	0.74			0.74	0.68	0.76	0.70	0.74		0.83	0.78	0.66	0.78	0.74				3	2	1	2	2	-	-	
5 14ME104	THERMODYNAMICS	0.78	0.61	0.70	0.52	0.71	0.71		0.75	0.74	0.72	0.75	0.76	0.74	0.77	0.64	0.70	0.57	0.72	0.72			2	1	2	0	2	2	-	
6 14ME105	MATERIAL SCIENCE AND ENGINEERING	0.65	0.64	0.84	0.73	0.70			0.76	0.76	0.74	0.75	0.76		0.67	0.67	0.82	0.79	0.71				1	1	3	2	2	2	-	
7 14ME202	MECHANICS OF SOLIDS & MATERIAL SCIENCE PRACTICALS	0.90	0.90	0.90	0.90	0.90			0.74	0.74	0.74	0.74	0.74		0.87	0.87	0.87	0.87	0.87				5	5	3	3	3	-	-	
8 14ME203	MACHINE DRAWING LAB	0.99	0.99	0.99	0.99	0.99			0.77	0.77	0.77	0.77	0.77		0.95	0.95	0.95	0.95	0.95				9	9	3	3	3	-	-	
9 14MAT104	Probability & Statistics	0.72	0.47	0.67	0.77	0.59			0.76	0.75	0.74	0.76	0.76		0.78	0.53	0.68	0.77	0.82				2	0	1	2	1	-	-	
10 14ME106	Fluid Mechanics	0.75	0.71	0.58	0.67	0.65	0.73		0.72	0.72	0.71	0.76	0.76		0.74	0.71	0.61	0.69	0.67	0.58			2	2	1	1	1	0	-	
11 14ME107	Machine Design - I	0.62	0.55	0.49	0.62	0.43			0.72	0.72	0.71	0.76	0.76		0.64	0.58	0.53	0.65	0.50				1	0	0	1	0	-	-	
12 14ME108	Dynamics of Machinery	0.75	0.61	0.83	0.81	0.76			0.76	0.75	0.75	0.61	0.90	0.89	0.75	0.63	0.81	0.77	0.79	0.18			2	1	3	2	2	0	-	
13 14ME109	Applied Thermodynamics	0.87	0.86	0.81	0.63	0.80			0.74	0.72	0.73	0.76	0.90	0.91	0.84	0.83	0.79	0.66	0.82	0.18			3	3	2	1	3	0	-	
14 14ME110	Production Techniques - I	0.58	0.58	0.58	0.58	0.58			0.61	0.61	0.61	0.61	0.61		0.59	0.59	0.59	0.59	0.59				0	0	0	0	0	-	-	
15 14ME204	Production Techniques Practicals - I	0.99	0.99	0.99	0.99	0.99			0.80	0.80	0.80	0.80	0.80		0.95	0.95	0.95	0.95	0.95				3	3	3	3	3	-	-	
16 14ME205	Dynamics Lab & Electrical Machines Practicals	0.96	0.96	0.96	0.96	0.96	0.96		0.77	0.77	0.77	0.77	0.77	0.77	0.92	0.92	0.92	0.92	0.92	0.92			3	3	3	3	3	3	-	
17 14EMS103	Soft Skills	0.65	0.80	0.68	0.70	0.64			0.70	0.70	0.70	0.70	0.70		0.64	0.78	0.68	0.70	0.65				1	2	1	2	1	-	-	
18 14HUM102	Principles of Management	1.00	0.90	0.90	0.90	0.92			0.81	0.81	0.81	0.81	0.81		0.96	0.88	0.88	0.88	0.90				3	3	3	3	3	-	-	
19 14ME111	Machine Design II	0.75	0.69	0.65	0.66	0.65	0.82	0.85	0.78	0.77	0.74	0.76	0.77	0.78	0.76	0.71	0.67	0.68	0.67	0.81	0.16		2	2	1	1	1	1	3	0
20 14ME112	Heat Transfer	0.58	0.79	0.57	0.52	0.64	0.68	0.90	0.77	0.76	0.74	0.76	0.88	0.69	0.70	0.62	0.74	0.60	0.57	0.65	0.68	0.34	1	2	1	0	1	1	3	0
21 14ME113	Production Techniques - II	0.83	0.83	0.83	0.83				0.81	0.81	0.82	0.83			0.83	0.63	0.83	0.83					3	3	3	3	3	-	-	
22 14HUM101	Heat Transfer Practicals	1.00	1.00	1.00	1.00	1.00			0.80	0.81	0.81	0.81	0.80		0.96	0.96	0.96	0.96	0.96				3	3	3	3	3	-	-	
23 14ME207	Production Techniques Practicals - II	0.98	0.98	0.98	0.98				0.82	0.82	0.82	0.82	0.82		0.95	0.95	0.95	0.95	0.16				3	3	1	3	0	-	-	
24 14ME114	PRIME MOVERS & FLUID MACHINES	0.65	0.68	0.83	0.81				0.78	0.82	0.82	0.79			0.68	0.71	0.85	0.81					1	2	3	3	-	-		
25 14ME115	INSTRUMENTATION & CONTROL SYSTEMS	0.92	0.99	0.81	0.77	0.78			0.77	0.77	0.77	0.77	0.77		0.89	0.95	0.80	0.77	0.78				3	3	3	2	2	-	-	
26 14ME116	FINITE ELEMENT METHODS	0.94	0.87	0.65	0.48	0.64			0.97	0.97	0.97	0.97	0.97		0.95	0.89	0.71	0.58	0.71				3	3	2	0	2	-	-	
27 14ME117	IC ENGINES	0.91	0.72	0.67	0.57	0.53			0.80	0.75	0.75	0.77	0.77		0.89	0.75	0.69	0.61	0.58				3	2	1	1	0	-	-	
28 14ME208	IC ENGINES PRACTICALS	0.94	0.94	0.94	0.94	0.94			0.72	0.72	0.72	0.72	0.72		0.90	0.90	0.90	0.90	0.90				3	3	3	3	3	-	-	
29 14ME209	FLUID MECHANICS & MACHINES PRACTICALS	0.92	0.92	0.92	0.92	0.92			0.83	0.83	0.83	0.89	0.65		0.90	0.90	0.90	0.90	0.90				3	3	3	3	3	-	-	
Ang		0.82	0.79	0.79	0.77	0.76	0.78	0.83	0.76	0.76	0.76	0.76	0.77	0.78	0.74	0.81	0.78	0.78	0.77	0.74	0.60	0.15	2.00	2.00	2.00	2.00	2.00	1.00	0.00	

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**Head of the Department  
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**Madanapalle Institute of Technology & Science**  
**Department of Mechanical Engineering**

Program Articulation matrix Showing the strength of Contribution of Courses to Attainment of POs/PSOs  
**PO\_Assessment (15-19 batch)**

Course code	Name	Direct attainment							Indirect attainment							Combined							Attainment Levels						
		CO1	CO2	CO3	CO4	CO5	CO6	CO7	CO1	CO2	CO3	CO4	CO5	CO6	CO7	CO1	CO2	CO3	CO4	CO5	CO6	CO7	CO1	CO2	CO3	CO4	CO5	CO6	CO7
1 14MAT103	DIFFERENTIAL EQUATIONS & LAPLACE TRANSFORMS	0.66	0.81	0.79	0.69	0.62			0.75	0.74	0.74	0.74	0.75			0.68	0.64	0.78	0.70	0.85			1	1	2	2	1	-	-
2 14HUM101	PRINCIPLES OF ECONOMICS	0.77	0.49	0.59	0.72	0.58			0.75	0.74	0.74	0.74	0.75			0.77	0.54	0.62	0.72	0.61			2	0	1	2	1	-	-
3 14ME302	MECHANICS OF SOLIDS	0.72	0.89	0.52	0.53	0.54	0.56		0.66	0.65	0.66	0.65	0.69	0.65		0.71	0.68	0.55	0.55	0.57	0.58		2	1	0	0	0	0	-
4 14ME308	KINEMATICS OF MACHINERY	0.57	0.78	0.78	0.75	0.61			0.74	0.72	0.76	0.72	0.74			0.80	0.77	0.78	0.74	0.64			1	2	2	2	1	-	-
5 14ME304	THERMOFLUID MECHANICS	0.55	0.57	0.63	0.49	0.68	0.72		0.75	0.73	0.72	0.72	0.73	0.76		0.59	0.60	0.63	0.54	0.67	0.73		0	1	1	0	1	2	-
6 14ME305	MATERIAL SCIENCE AND ENGINEERING	0.62	0.35	0.66	0.62	0.57			0.76	0.78	0.79	0.75	0.76			0.85	0.44	0.69	0.65	0.61			1	0	1	1	1	-	-
7 14ME300	MECHANICS OF SOLIDS & MATERIAL SCIENCE PRACTICALS	0.72	0.72	0.72	0.72	0.72			0.74	0.74	0.74	0.74	0.74			0.72	0.72	0.72	0.72	0.72			2	2	2	2	2	-	-
8 14ME303	MACHINE DRAWING LAB	0.82	0.82	0.82	0.82	0.82			0.77	0.77	0.77	0.77	0.77			0.81	0.81	0.81	0.81	0.81			3	3	3	3	3	-	-
9 14MAT104	Probability & Statistics	0.63	0.71	0.78	0.65	0.74			0.76	0.75	0.74	0.76	0.76			0.66	0.72	0.77	0.67	0.74			1	2	2	1	2	-	-
10 14ME306	Fluid Mechanics	0.41	0.52	0.44	0.75	0.56	0.55		0.71	0.69	0.73	0.76	0.77	0.76		0.47	0.55	0.50	0.75	0.60	0.59		0	0	0	2	1	0	-
11 14ME307	Machine Design - I	0.44	0.42	0.53	0.69	0.39			0.72	0.72	0.71	0.76	0.77			0.50	0.48	0.57	0.70	0.47			0	0	0	2	0	-	-
12 14ME308	Dynamics of Machinery	0.80	0.71	0.64	0.63	0.56	0.51		0.76	0.73	0.75	0.61	0.50	0.88		0.79	0.71	0.66	0.65	0.63	0.58		2	2	1	1	1	0	-
13 14ME309	Applied Thermodynamics	0.74	0.42	0.58	0.82	0.89	0.57		0.74	0.72	0.73	0.76	0.86	0.82		0.74	0.48	0.61	0.41	0.72	0.62		2	0	1	0	2	1	-
14 14ME310	Production Techniques - I	0.50	0.50	0.50	0.50	0.50			0.62	0.61	0.60	0.62	0.61			0.91	0.91	0.90	0.91	0.98			3	3	3	3	3	-	-
15 14ME304	Production Techniques Practicals - I	0.88	0.88	0.88	0.88	0.88			0.80	0.80	0.80	0.80	0.80			0.94	0.94	0.94	0.94	0.94			3	3	3	3	3	-	-
16 14ME305	Dynamics Lab & Electrical Machines Practicals	0.87	0.97	0.97	0.97	0.97	0.97		0.77	0.77	0.77	0.77	0.77	0.80		0.93	0.93	0.93	0.93	0.93	0.94		3	3	3	3	3	3	-
17 14ENG308	Soft Skills	0.58	0.55	0.66	0.59	0.71			0.70	0.70	0.70	0.70	0.70			0.60	0.58	0.67	0.61	0.71			1	0	1	1	2	-	-
18 14HUM302	Principles of Management	0.88	0.87	0.78	0.82	0.75			0.81	0.81	0.81	0.81	0.81			0.87	0.86	0.79	0.82	0.76			3	3	2	3	2	-	-
19 14ME311	Machine Design II	0.59	0.84	0.56	0.38	0.59	0.54	0.72	0.78	0.77	0.77	0.77	0.77	0.79	0.77	0.58	0.67	0.60	0.46	0.68	0.59	0.79	0	1	1	0	1	0	2
20 14ME312	Heat Transfer	0.89	0.85	0.89	0.60	0.48	0.59	0.65	0.78	0.76	0.74	0.76	0.68	0.68	0.75	0.87	0.83	0.70	0.63	0.52	0.61	0.67	3	3	2	1	0	1	3
21 14ME313	Production Techniques - II	0.81	0.71	0.67	0.66				0.86	0.85	0.78	0.84				0.82	0.75	0.89	0.70				3	2	1	2	-	-	-
22 14HUM401	Heat Transfer Practicals	0.84	0.84	0.84	0.84	0.84			0.76	0.76	0.76	0.76	0.76			0.82	0.82	0.82	0.82	0.82			3	3	3	3	3	-	-
23 14ME207	Production Techniques Practicals - II	0.88	0.88	0.88	0.88				0.82	0.82	0.82	0.82	0.82			0.95	0.95	0.95	0.95	0.16			3	3	3	3	0	-	-
24 14ME114	PRIME MOVERS & FLUID MACHINES	0.60	0.62	0.59	0.71	0.59			0.78	0.82	0.81	0.79			0.71	0.66	0.68	0.73	0.47				2	1	1	2	0	-	-
25 14ME115	INSTRUMENTATION & CONTROL SYSTEMS	0.85	0.65	0.67	0.70	0.75			0.77	0.77	0.77	0.77	0.77			0.83	0.66	0.85	0.71	0.75			3	1	3	2	2	-	-
26 14ME116	FINITE ELEMENT METHODS	0.79	0.62	0.53	0.60	0.60			0.97	0.97	0.97	0.97	0.97			0.83	0.69	0.62	0.67	0.67			3	1	1	1	1	-	-
27 14ME117	IC ENGINES	0.76	0.58	0.58	0.54	0.73			0.74	0.75	0.75	0.77	0.65			0.76	0.61	0.63	0.59	0.71			2	1	1	0	2	-	-
28 14ME208	IC ENGINES PRACTICALS	0.94	0.94	0.94	0.94	0.94			0.72	0.72	0.72	0.72	0.72			0.90	0.90	0.90	0.90	0.90			3	3	3	3	3	-	-
29 14ME209	FLUID MECHANICS & MACHINES PRACTICALS	0.91	0.91	0.91	0.91	0.91			0.85	0.85	0.83	0.83	0.83			0.89	0.89	0.89	0.89	0.89			3	3	3	3	3	-	-
30 14ME118	ENGINEERING OPTIMIZATION	0.62	0.65	0.84	0.63	0.73			0.82	0.81	0.81	0.81	0.82			0.66	0.64	0.83	0.71	0.75			1	3	3	2	2	-	-
31 14ME119	METROLOGY AND MEASUREMENTS	0.81	0.81	0.81	0.81	0.81			0.85	0.80	0.80	0.81	0.82			0.81	0.81	0.81	0.81	0.81			3	3	3	3	3	-	-
32 14ME120	CAD/CAM	0.73	0.36	0.89	0.45	0.42			0.84	0.84	0.85	0.82			0.75	0.46	0.48	0.52	0.34				2	0	0	0	0	-	-
33 14ME210	CAD/CAE/CAM PRACTICALS	0.72	0.72						0.85	0.65					0.70	0.71							2	2	-	-	-	-	-
34 14ME211	INSTRUMENTATION & CONTROL ENGINEERING PRACTICALS	0.89	0.89	0.89	0.89	0.89			0.81	0.84	0.87	0.85	0.85			0.87	0.88	0.89	0.88	0.88			3	3	3	3	3	-	-
35 14ME501	Mini Project	0.82	0.76	0.58	0.55	0.68	0.68		0.70	0.69	0.88	0.84	0.82	0.79		0.81	0.77	0.63	0.61	0.71	0.70		3	2	1	1	2	2	-
36 14ME502	Full Semester Internship/ Project Work	0.81	0.89	0.67	0.80	0.88	0.77		0.89	0.91	0.90	0.91	0.93	0.89		0.91	0.89	0.72	0.82	0.89	0.79		3	3	2	3	3	2	-
37 14ME801	Technical Seminar	0.99	0.96	0.99	0.89	0.73			0.79	0.83	0.83	0.84	0.82			0.85	0.93	0.96	0.88	0.75			3	3	3	3	3	2	-
Avg.		0.75	0.71	0.71	0.70	0.69	0.65	0.69	0.77	0.77	0.77	0.77	0.76	0.78	0.75	0.77	0.73	0.74	0.72	0.70	0.67	0.70	2.00	2.00	2.00	2.00	2.00	1.00	2.00

  
**Head of the Department**  
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