


 MANJARA CHARITABLE TRUST
RAJIV GANDHI INSTITUTE OF TECHNOLOGY, MUMBAI
DEPARTMENT OF MECHANICAL ENGINEERING

Production Processes	2.19	1.66	1.94	0.92	1.38	1.77	0.99	1.57	--	0.96	--	1.18	0.96	0.96
Materials and Metallurgy	2.07	1.41	1.11	0.95	-	-	0.89	0.89	-	0.95	-	2.38	0.95	0.89
Thermodynamics	2.82	2.65	1.64	1.80	0.99	2.31	2.31	0.99	-	1.32	1.96	1.97	0.99	1.97
Materials Testing	2.75	1.77	0.96	0.96	-	-	-	-	-	1.92	-	0.96	0.96	0.96
Machine Shop Practice	2.33	2.00	1.50	1.50	--	2.33	--	1.00	--	1.00	--	1.00	1.60	2.00
CAD –Modeling	1.96	2.80	0.98	0.98	1.63	2.97	--	--	--	1.76	--	--	1.76	1.96
Mini Project – 1A	2.55	2.74	2.44	2.66	2.94	2.94	2.94	2.94	2.95	2.95	2.94	2.94	1.59	1.96
Engineering Mathematics-IV	2.65	0.98	0.98	1.64	0.98	--	--	--	--	--	--	0.98	-	-
Fluid Mechanics	3.00	2.50	1.17	1.50	1.00	-	-	-	-	1.00	-	1.00	1.00	1.67
Kinematics of Machinery	1.84	1.10	0.74	-	-	-	-	-	-	-	-	-	--	0.74
CAD/CAM	2.80	2.30	2.14	1.97	1.95	1.95	2.96	2.96	-	0.98	2.93	1.46	1.95	2.93
Industrial Electronics	1.58	0.99	0.99	-	0.99	-	0.99	-	-	0.99	0.99	0.99	1.15	1.81
Industrial Electronics	1.42	0.85	0.85	1.27	0.86	--	--	0.85	--	--	--	0.85	0.85	1.56
Python Programming	1.89	2.20	--	0.94	1.89	1.89	--	--	--	1.33	--	--	0.94	1.10
CNC and 3-D Printing	2.14	1.83	1.36	2.76	2.13	2.76	2.76	2.76	--	1.82	1.60	2.76	0.91	0.91
Mini Project – 1B	2.56	2.76	2.47	2.68	2.96	2.96	2.96	2.96	2.96	2.96	2.96	2.96	1.73	1.97
Mechanical Measurements and Controls	2.48	2.65	2.99	1.99	--	--	--	--	--	--	--	2.99	0.99	0.99
Thermal Engineering	1.92	2.07	1.74	2.24	1.88	1.85	1.23	1.42	-	-	1.71	1.75	1.43	2.08
Dynamics of Machinery	2.63	1.47	0.99	-	-	-	-	-	-	-	-	-	-	0.98
Finite Element Analysis	2.52	2.20	2.04	2.08	2.07	1.87	1.17	1.56	--	--	1.69	1.41	0.94	0.94
DESIGN OF EXPERIMENTS	1.29	1.29	--	1.29	--	--	--	--	--	--	--	2.94	0.32	0.32
Optimization Techniques	1.28	1.28	-	1.95	-	-	-	-	-	-	-	1.95	0.64	0.64
Computational Methods	1.98	1.22	0.79	1.38	-	-	-	-	-	-	-	-	-	-
Thermal Engineering	1.92	2.07	1.74	2.24	1.88	1.85	1.23	1.42	-	-	1.71	1.75	1.43	2.08
Dynamics of Machinery	2.65	2.65	1.56	-	1.85	-	-	-	2.82	2.01	-	-	1.08	1.24
Finite Element Analysis	2.83	1.88	2.83	2.83	1.88	1.87	1.17	1.56	-	-	1.68	1.40	0.93	0.93
Professional Communication and Ethics –II	-	-	-	-	-	-	-	2.62	1.55	1.61	-	0.93	0.94	-
Mini Project – 2 A	2.60	2.80	2.50	2.71	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	1.75	2.00
Machine Design	1.89	0.80	0.80	--	--	1.25	0.69	--	--	0.69	--	0.62	0.69	0.69
Turbo Machinery	2.15	1.91	1.18	0.85	--	1.97	--	--	--	0.71	--	0.71	0.95	0.89

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Heating, Ventilation, Air conditioning and Refrigeration	2.01	1.97	1.13	1.96	1.51	1.76	1.51	-	-	1.26	-	1.27	1.21	1.26
Automation and Artificial Intelligence	2.26	1.97	1.83	1.86	2.03	1.96	1.35	1.39	-	-	1.85	1.68	2.56	2.56
Department Level Optional Course – 2														
Press Tool Design	1.95	1.95	1.82	1.04	1.04	1.51	-	-	-	0.78	1.56	0.79	0.91	0.77
Metal Forming Technology	1.85	2.00	1.69	2.16	1.85	1.84	1.22	1.38	--	--	1.65	1.68	0.92	0.91
Machine Design	2.34	1.11	1.08	0.93	0.93	1.86	0.93	-	-	1.24	-	0.93	0.93	1.11
Turbo Machinery	2.15	1.91	1.18	0.85	--	1.97	--	--	--	0.71	--	0.71	0.95	0.89
Heating, Ventilation, Air conditioning and Refrigeration	2.27	1.63	1.66	2.05	1.82	1.82	2.70	2.11	-	1.62	-	1.81	1.52	0.90
Measurements and Automation	2.97	1.97	0.98	0.98	2.97	2.97	2.94	-	-	1.96	-	-	1.63	1.63
Mini Project – 2 B	2.60	2.80	2.50	2.71	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	1.75	2.00
Design of Mechanical System	2.04	2.04	0.94	-	-	-	-	-	-	-	-	-	0.71	0.71
Logistics and Supply Chain Management	1.67	2.12	1.70	1.99	1.97	2.58	2.40	2.58	2.58	--	1.70	1.49	1.29	0.86
Department Level Optional Course – 3														
Automotive Power Systems	1.56	1.17	1.44	1.09	--	2.37	1.84	1.31	0.78	0.78	1.98	1.38	1.37	0.78
Renewable Energy Sources	2.00	1.56	1.57	1.85	1.70	2.28	1.71	1.37	-	-	-	1.71	1.43	2.00
Department Level Optional Course – 4														
Machinery Diagnostics	1.04	1.03	0.51	1.50	1.20	1.55	0.51	-	-	-	1.55	1.03	0.51	1.13
Institute Level Optional Course – I*														
Management Information System	2.05	1.86	1.86	1.68	2.05	1.86	1.49	1.86	1.86	1.86	1.86	1.86	2.80	1.86
Operations Research														
Disaster Management and Mitigation Measures	1.75	1.05	1.16	--	--	2.65	2.34	2.65	0.87	3.00	1.98	1.31	1.02	0.87
Energy Audit and Management	2.03	1.84	2.03	2.03	0.91	1.83	2.75	--	2.77	2.79	2.77	2.77	1.14	0.91
Design of Mechanical System	2.83	2.83	1.67	-	2.00	-	-	-	3.00	2.17	-	-	1.17	1.33
Maintenance Engineering	2.23	2.56	0.95	2.56	1.58	1.89	0.95	--	--	--	1.89	1.72	1.52	1.52
Industrial Skills	2.00	1.67	--	1.50	2.33	--	--	3.00	3.00	2.17	2.00	1.00	1.00	1.00

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Major Project I	2.58	2.48	2.14	2.18	2.98	2.98	2.98	2.97	2.97	1.98	2.48	2.98	1.48	1.64
Operations Planning and Control	1.60	1.33	0.81	2.41	1.58	--	--	--	--	1.33	1.60	1.60	0.81	0.81
Department Level Optional Course – 5														
Composite Materials	1.92	1.50	1.20	0.82	1.73	--	0.87	--	--	--	--	--	--	0.82
Smart Materials	2.09	1.57	0.78	0.78	0.78	1.57	1.57	--	--	0.78	0.78	2.35	0.78	1.18
Micro Electro Mechanical Systems (MEMS)	1.56	0.78	0.78	0.78	0.78	--	0.78	--	0.78	0.78	0.78	0.78	0.78	--
Department Level Optional Course – 6														
Product Design and Development	1.53	1.95	1.81	1.81	1.67	1.66	1.53	1.68	2.24	1.68	1.67	1.88	1.46	1.50
Total Quality Management	2.40	1.98	1.97	2.37	2.55	--	2.40	0.85	--	0.85	0.84	2.54	1.18	1.69
Institute Level Optional Course – 2														
Project Management	0.85	1.34	1.58	1.71	1.03	1.48	1.62	0.88	1.35	1.18	1.17	0.92	1.44	1.69
Research Methodology	2.78	2.78	2.44	2.44	2.94	1.93	1.93	0.97	0.97	2.98	-	-	-	-
Digital Business Management	0.74	1.15	1.27	0.91	1.08	-	-	1.48	2.24	1.48	-	-	1.32	0.33
Environmental Management	1.05	0.70	--	--	--	--	2.15	2.13	--	2.12	--	2.28	1.40	0.70
Product Design and Development	1.69	2.16	2.01	2.01	1.86	1.85	1.70	1.87	2.49	1.87	1.86	2.10	1.62	1.67
Laboratory based on IoT	1.66	1.00	1.00	1.33	1.17	--	1.00	1.99	--	1.00	--	1.00	1.00	2.82
Major Project II	3.00	2.24	1.59	0.99	2.99	2.99	2.99	2.99	0.99	2.32	2.33	3.00	2.15	1.32
DIRECT ATTAINMENT	2.07	1.69	1.42	1.67	1.72	2.11	1.82	1.83	2.10	1.59	1.87	1.59	1.20	1.27


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Program level Attainment through Indirect tools

DEPARTMENT OF MECHANICAL ENGINEERING															
CALCULATION OF INDIRECT ATTAINMENT															
TOOLS		PROGRAM OUTCOMES													
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
PROGRAM EXIT SURVEY		2.38	2.42	2.47	2.45	2.25	2.45	2.37	2.42	2.53	2.49	2.49	2.47	2.46	2.41
ALUMNI FEEDBACK		1.94	1.92	1.93	1.92	1.86	2.02	2.02	2.05	1.94	2.02	1.89	2.08	2.05	2.02
PARENTS FEEDBACK		-	-	-	-	-	2.43	2.52	2.47	2.46	2.42	2.52	2.5	2.43	2.43
STUDENT PROFESSIONAL BODIES	AERO	2	1	1	1	2	-	-	-	1	1	1	1	1.1	1
	ASME	1.7	2	2.75	1.6	2.57	1.45	1.67	1.67	2.6	2.17	3	1.9	1.91	1.7
	IIIE	3	2	2	-	3	2	-	2	2.5	2.5	2	3	2	2
	ISHRAE	3	1	-	-	-	-	-	-	2.2	1.6	1.5	1.5	-	-
	MESA	1.25	-	1	-	2	-	1	3	1.25	2	1	1	1	1
	ROBOTICS	3	2.75	3	1.5	3	-	-	2	2.33	3	2	1.5	1.5	1
	SAE	1	1	2	1	2	2	2	1	3	2	3	2	3	2
INDUSTR/EMPOYER FEEDBACK		1.89	-s	-	-	-	2.5		3	2	1.78	-	2.11	-	-
AVERAGE		2.12	1.76	2.02	1.58	2.33	2.12	1.93	2.18	2.16	2.09	2.04	1.91	1.94	1.73
20% OF INDIRECT ATTAINMENT		0.42	0.35	0.40	0.32	0.47	0.42	0.39	0.44	0.43	0.42	0.41	0.38	0.39	0.35

Program level Attainment through Direct and Indirect tools

Tools	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
DIRECT ATTAINMENT	2.07	1.69	1.42	1.67	1.72	2.11	1.82	1.83	2.10	1.59	1.87	1.59	1.20	1.27
80% OF DIRECT ATTAINMENT	1.65	1.35	1.14	1.34	1.38	1.69	1.46	1.46	1.68	1.28	1.50	1.27	0.96	1.02
INDIRECT ATTAINMENT	2.12	1.76	2.02	1.58	2.33	2.12	1.93	2.18	2.16	2.09	2.04	1.91	1.94	1.73
20% OF INDIRECT ATTAINMENT	0.42	0.35	0.40	0.32	0.47	0.42	0.39	0.44	0.43	0.42	0.41	0.38	0.39	0.35
TOTAL PO ATTAINMENT	2.08	1.70	1.54	1.65	1.84	2.11	1.84	1.90	2.11	1.69	1.91	1.65	1.35	1.36