

Madhav Institute of Techonology and science

CO Attainment (July-Decemebr2018)

Department Name: Mechanical engineering

Semester	Course Code	Course Name	COs	Direct % Attainment	Indirect % Attainment	Total % Attainment
Semester 3	120301	Material Science	CO1	84	63.41	79.88
			CO2	69	60.16	67.23
			CO3	66	53.66	63.53
			CO4	67	65.85	66.77
			CO5	67	58.54	65.31
			CO6	62	56.10	60.82
	120302	Mechanics of Materials	CO1	82	60.78	77.76
			CO2	84	60.78	79.36
			CO3	86	61.76	81.15
			CO4	73	58.33	70.07
			CO5	67	58.82	65.36
			CO6	72	56.37	68.87
	120303	Theory of Machines-1	CO1	80	57.47	75.49
			CO2	87	59.77	81.55
			CO3	75	59.77	71.95
			CO4	85	58.62	79.72
			CO5	71	64.37	69.67
			CO6	68	59.77	66.35
	120304	Fluid Mechanics and Hydraulic Machines	CO1	71	73.81	71.56
			CO2	72	65.48	70.70
			CO3	69	67.86	68.77
			CO4	70	61.90	68.38
			CO5	59	58.33	58.87
			CO6	50	57.14	51.43

Semester 5

Semester	Course Code	Course Name	COs	Direct % Attainment	Indirect % Attainment	Total % Attainment
Semester 5	BMEL501	Metrology, Measurement and Control	CO1	90	78.95	87.79
			CO2	80	66.67	77.33
			CO3	82	66.67	78.93
			CO4	77	71.93	75.99
			CO5	71	73.68	71.54
			CO6	67	75.44	68.69
	BMEL503	Advance Mechanics of Materials	CO1	81	67.90	78.38
			CO2	80	70.37	78.07
			CO3	73	66.67	71.73
			CO4	76	64.20	73.64
			CO5	67	64.20	66.44
			CO6	67	59.26	65.45
	BMEL504	Industrial Engineering	CO1	88	79.49	86.30
			CO2	86	76.92	84.18
			CO3	80	76.92	79.38
			CO4	70	76.92	71.38
			CO5	65	75.64	67.13
			CO6	59	77.56	62.71
	BMEL505	Internal Combustion Engine	CO1	85	75.93	83.19
			CO2	64	66.67	64.53
			CO3	76	61.11	73.02
			CO4	72	64.81	70.56
			CO5	73	70.37	72.47
			CO6	61	79.63	64.73
	BMEL506	Machine Design-II	CO1	91	69.23	86.65
			CO2	89	71.79	85.56
			CO3	82	65.38	78.68
			CO4	77	67.95	75.19
			CO5	70	61.54	68.31
			CO6	65	67.95	65.59

Semester 7

Semester	Course Code	Course Name	COs	Direct % Attainment	Indirect % Attainment	Total % Attainment
Semester 7	BMEL701	Machine Design III	CO1	91	77.78	88.36
			CO2	87	73.33	84.27
			CO3	93	68.89	88.18
			CO4	84	64.44	80.09
			CO5	87	75.56	84.71
			CO6	72	77.78	73.16
	BMEL702	Refrigeration & Air-Conditioning	CO1	83	64.29	79.26
			CO2	76	61.11	73.02
			CO3	69	54.76	66.15
			CO4	71	65.08	69.82
			CO5	57	57.94	57.19
			CO6	54	55.56	54.31
	BMEL703	Robotics & Mechatronics	CO1	74	56.25	70.45
			CO2	60	55.56	59.11
			CO3	61	53.70	59.54
			CO4	67	59.26	65.45
			CO5	69	57.41	66.68
			CO6	62	53.70	60.34
	BMEL704	Heat & Mass Transfer	CO1	86	66.67	82.13
			CO2	82	63.70	78.34
			CO3	69	57.78	66.76
			CO4	81	67.41	78.28
			CO5	73	60.74	70.55
			CO6	65	62.96	64.59
BMEL705	Non-conventional energy sources	CO1	82	69.77	79.55	
		CO2	87	71.32	83.86	
		CO3	90	69.77	85.95	
		CO4	74	58.91	70.98	
		CO5	57	68.22	59.24	
		CO6	69	64.34	68.07	

Madhav Institute of Techonology and science

CO Attainment (July-Decemebr2018)

Deparment Name: Mechanical engineering

Semester	Course Code	Course Name	COs	Direct % Attainment	Indirect % Attainment	Gap between Direct & Indirect Attainment	Target Attainment level	Total % Attainment	Gap between Target and Total CO
Semester 3	120301	Material Science	CO1	84	63.41	20.59	65.00	79.88	14.88
			CO2	69	60.16	8.84	65.00	67.23	2.23
			CO3	66	53.66	12.34	65.00	63.53	-1.47
			CO4	67	65.85	1.15	65.00	66.77	1.77
			CO5	67	58.54	8.46	65.00	65.31	0.31
			CO6	62	56.10	5.90	65.00	60.82	-4.18
	120302	Mechanics of Materials	CO1	82	60.78	21.22	65.00	77.76	12.76
			CO2	84	60.78	23.22	65.00	79.36	14.36
			CO3	86	61.76	24.24	65.00	81.15	16.15
			CO4	73	58.33	14.67	65.00	70.07	5.07
			CO5	67	58.82	8.18	65.00	65.36	0.36
			CO6	72	56.37	15.63	65.00	68.87	3.87
	120303	Theory of Machines-1	CO1	80	57.47	22.53	65.00	75.49	10.49
			CO2	87	59.77	27.23	65.00	81.55	16.55
			CO3	75	59.77	15.23	65.00	71.95	6.95
			CO4	85	58.62	26.38	65.00	79.72	14.72
			CO5	71	64.37	6.63	65.00	69.67	4.67
			CO6	68	59.77	8.23	65.00	66.35	1.35
	120304	Fluid Mechanics and Hydraulic Machines	CO1	71	73.81	-2.81	65.00	71.56	6.56
			CO2	72	65.48	6.52	65.00	70.70	5.70
			CO3	69	67.86	1.14	65.00	68.77	3.77
			CO4	70	61.90	8.10	65.00	68.38	3.38
			CO5	59	58.33	0.67	65.00	58.87	-6.13
			CO6	50	57.14	-7.14	65.00	51.43	-13.57

Semester 5

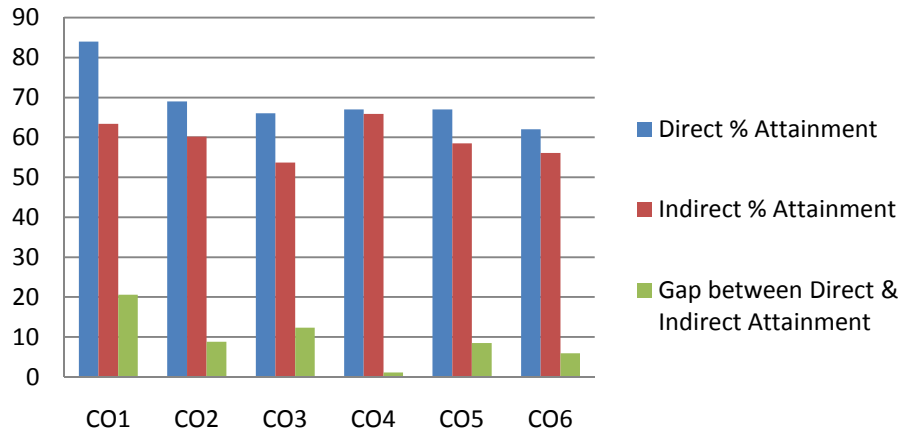
Semester	Course Code	Course Name	COs	Direct % Attainment	Indirect % Attainment	Gap between Direct & Indirect Attainment	Target Attainment level	Total % Attainment	Gap between Target and Total CO
Semester 5	BMEL501	Metrology, Measurement and Control	CO1	90	78.95	11.05	65.00	87.79	22.79
			CO2	80	66.67	13.33	65.00	77.33	12.33
			CO3	82	66.67	15.33	65.00	78.93	13.93
			CO4	77	71.93	5.07	65.00	75.99	10.99
			CO5	71	73.68	-2.68	65.00	71.54	6.54
			CO6	67	75.44	-8.44	65.00	68.69	3.69
	BMEL503	Advance Mechanics of Materials	CO1	81	67.90	13.10	65.00	78.38	13.38
			CO2	80	70.37	9.63	65.00	78.07	13.07
			CO3	73	66.67	6.33	65.00	71.73	6.73
			CO4	76	64.20	11.80	65.00	73.64	8.64
			CO5	67	64.20	2.80	65.00	66.44	1.44
			CO6	67	59.26	7.74	65.00	65.45	0.45
	BMEL504	Industrial Engineering	CO1	88	79.49	8.51	65.00	86.30	21.30
			CO2	86	76.92	9.08	65.00	84.18	19.18
			CO3	80	76.92	3.08	65.00	79.38	14.38
			CO4	70	76.92	-6.92	65.00	71.38	6.38
			CO5	65	75.64	-10.64	65.00	67.13	2.13
			CO6	59	77.56	-18.56	65.00	62.71	-2.29
	BMEL505	Internal Combustion Engine	CO1	85	75.93	9.07	65.00	83.19	18.19
			CO2	64	66.67	-2.67	65.00	64.53	-0.47
			CO3	76	61.11	14.89	65.00	73.02	8.02
			CO4	72	64.81	7.19	65.00	70.56	5.56
			CO5	73	70.37	2.63	65.00	72.47	7.47
			CO6	61	79.63	-18.63	65.00	64.73	-0.27
BMEL506	Machine Design-II	CO1	91	69.23	21.77	65.00	86.65	21.65	
		CO2	89	71.79	17.21	65.00	85.56	20.56	
		CO3	82	65.38	16.62	65.00	78.68	13.68	
		CO4	77	67.95	9.05	65.00	75.19	10.19	
		CO5	70	61.54	8.46	65.00	68.31	3.31	
		CO6	65	67.95	-2.95	65.00	65.59	0.59	

Semester 7

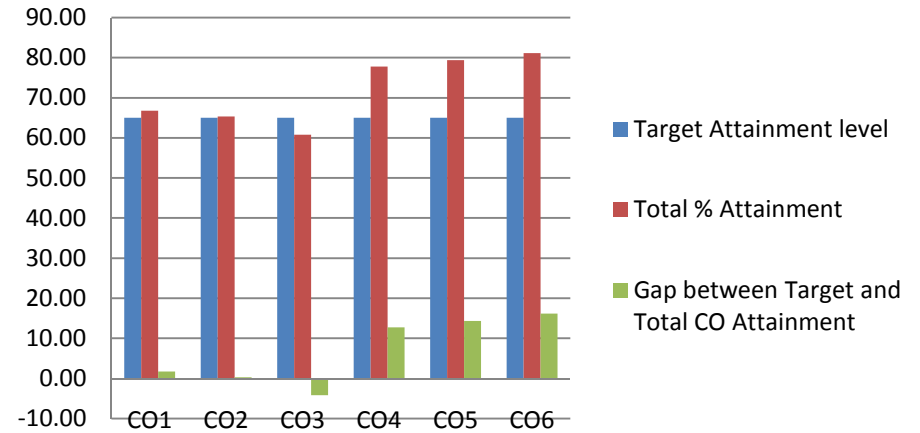
Semester	Course Code	Course Name	COs	Direct % Attainment	Indirect % Attainment	Gap between Direct & Indirect Attainment	Target Attainment level	Total % Attainment	Gap between Target and Total CO
Semester 7	BMEL701	Machine Design III	CO1	91	77.78	13.22	65.00	88.36	23.36
			CO2	87	73.33	13.67	65.00	84.27	19.27
			CO3	93	68.89	24.11	65.00	88.18	23.18
			CO4	84	64.44	19.56	65.00	80.09	15.09
			CO5	87	75.56	11.44	65.00	84.71	19.71
			CO6	72	77.78	-5.78	65.00	73.16	8.16
	BMEL702	Refrigeration & Air-Conditioning	CO1	83	64.29	18.71	65.00	79.26	14.26
			CO2	76	61.11	14.89	65.00	73.02	8.02
			CO3	69	54.76	14.24	65.00	66.15	1.15
			CO4	71	65.08	5.92	65.00	69.82	4.82
			CO5	57	57.94	-0.94	65.00	57.19	-7.81
			CO6	54	55.56	-1.56	65.00	54.31	-10.69
	BMEL703	Robotics & Mechatronics	CO1	74	56.25	17.75	65.00	70.45	5.45
			CO2	60	55.56	4.44	65.00	59.11	-5.89
			CO3	61	53.70	7.30	65.00	59.54	-5.46
			CO4	67	59.26	7.74	65.00	65.45	0.45
			CO5	69	57.41	11.59	65.00	66.68	1.68
			CO6	62	53.70	8.30	65.00	60.34	-4.66
	BMEL704	Heat & Mass Transfer	CO1	86	66.67	19.33	65.00	82.13	17.13
			CO2	82	63.70	18.30	65.00	78.34	13.34
			CO3	69	57.78	11.22	65.00	66.76	1.76
			CO4	81	67.41	13.59	65.00	78.28	13.28
			CO5	73	60.74	12.26	65.00	70.55	5.55
			CO6	65	62.96	2.04	65.00	64.59	-0.41
BMEL705	Non-conventional energy sources	CO1	82	69.77	12.23	65.00	79.55	14.55	
		CO2	87	71.32	15.68	65.00	83.86	18.86	
		CO3	90	69.77	20.23	65.00	85.95	20.95	
		CO4	74	58.91	15.09	65.00	70.98	5.98	
		CO5	57	68.22	-11.22	65.00	59.24	-5.76	
		CO6	69	64.34	4.66	65.00	68.07	3.07	

Mechanical 3rd Semester Gap Analysis Via Plots

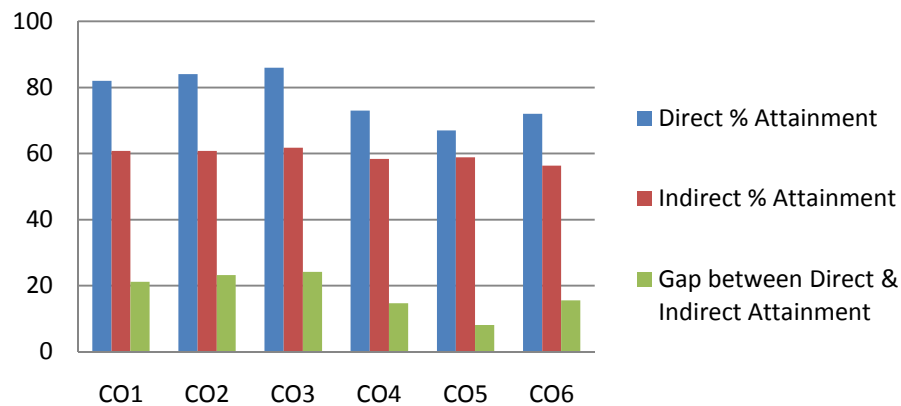
Material Science(120301)



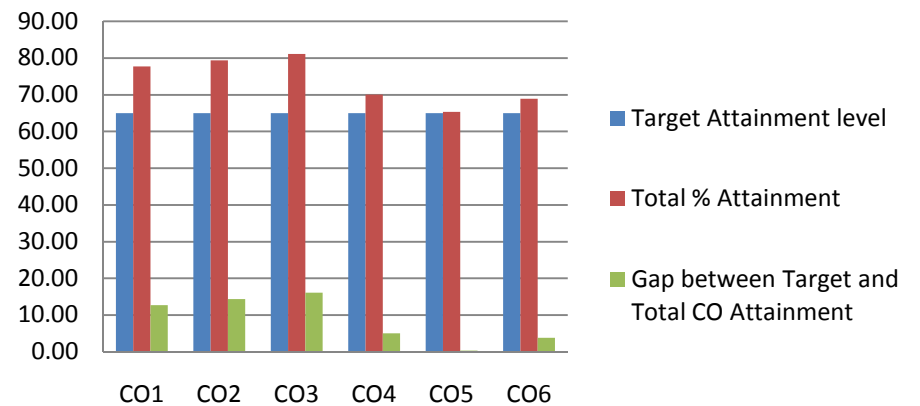
Material Science(120301)



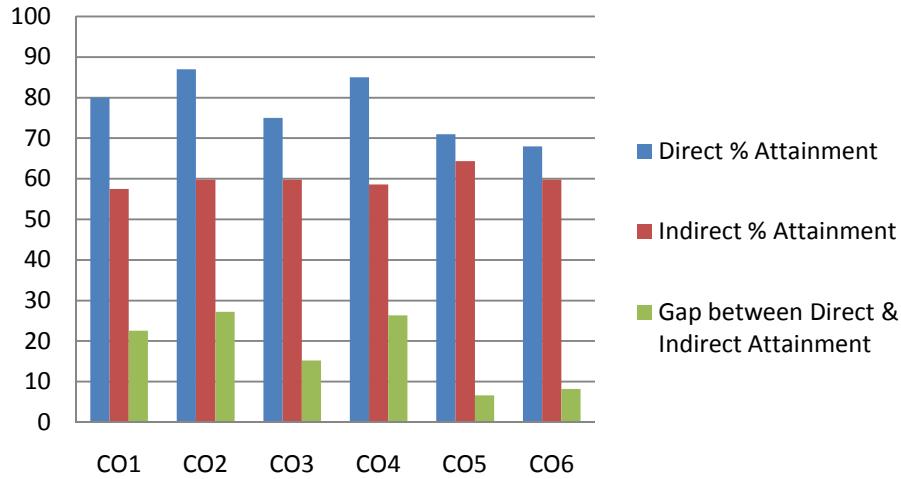
Mechanics of Materials(120302)



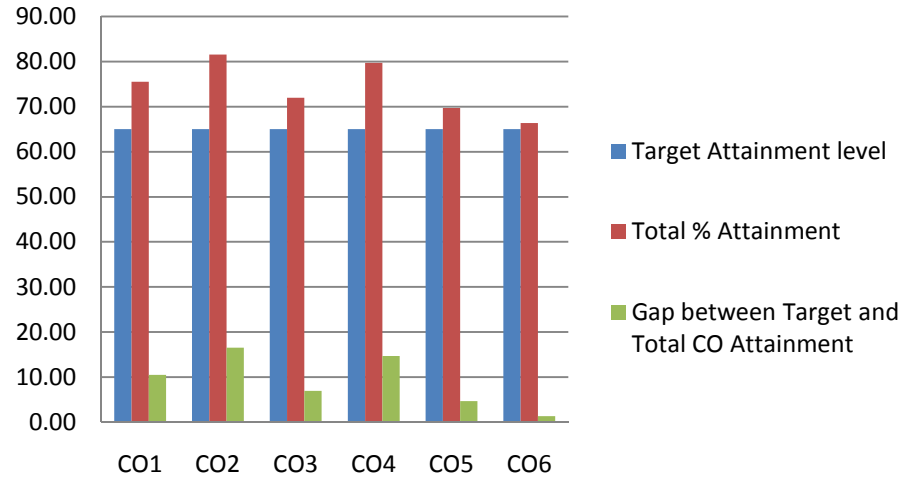
Mechanics of Materials(120302)



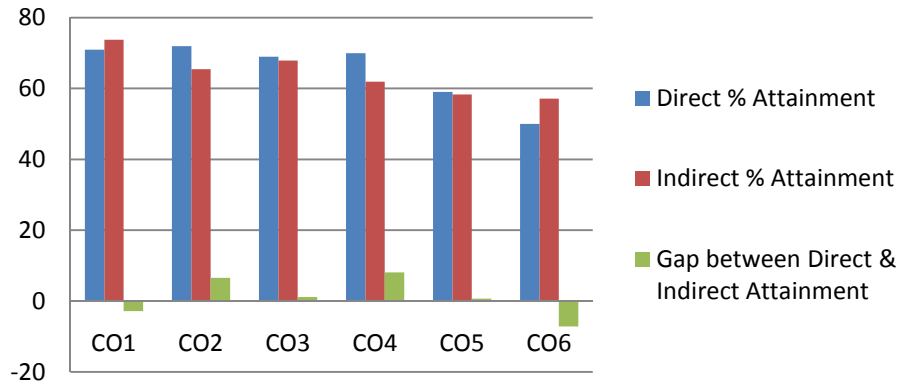
Theory of Machines-1



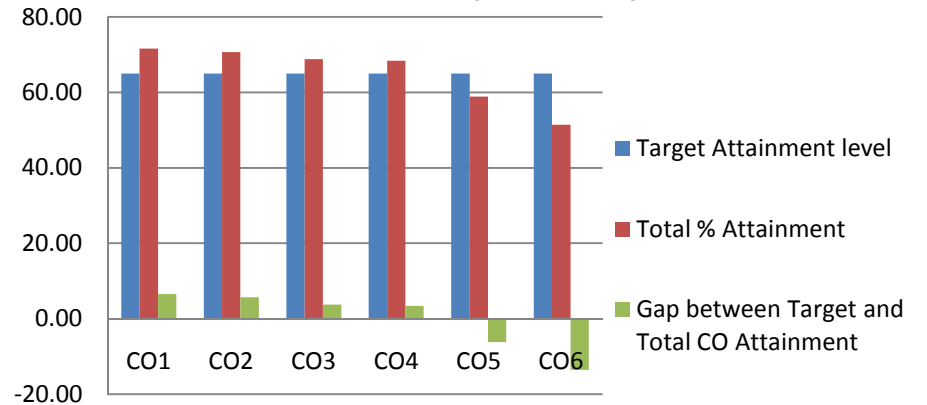
Theory of Machines-1



Fluid Mechanics and Hydraulic Machines(120304)

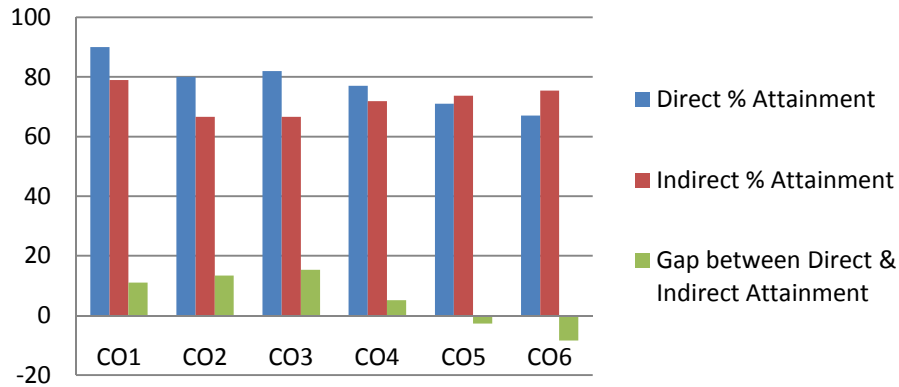


Fluid Mechanics and Hydraulic Machines(120304)

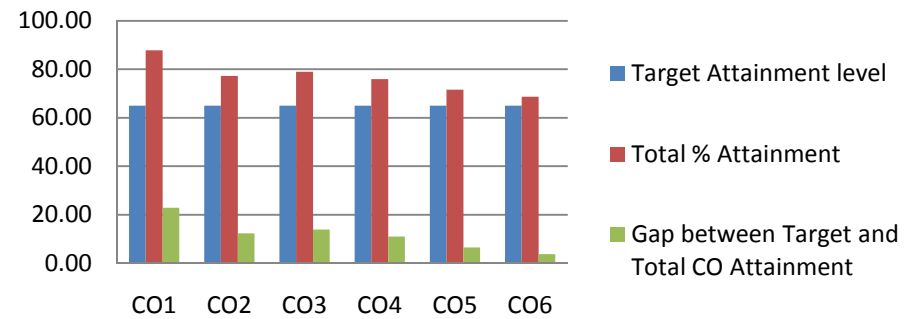


Mechanical 5th Semester Gap Analysis Via Plots

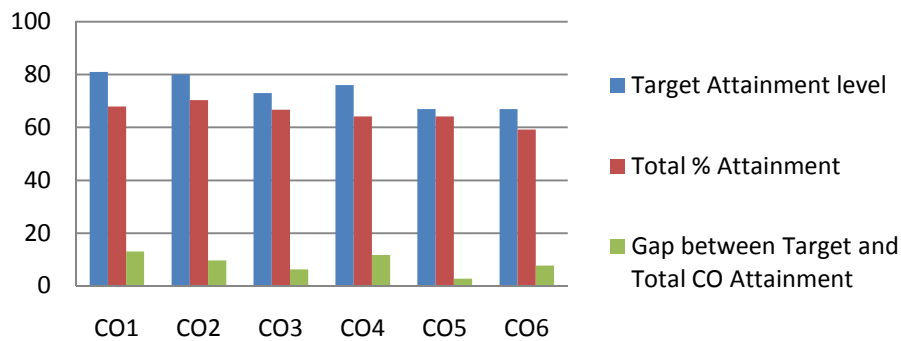
Metrology, Measurement and Control (BMEL501)



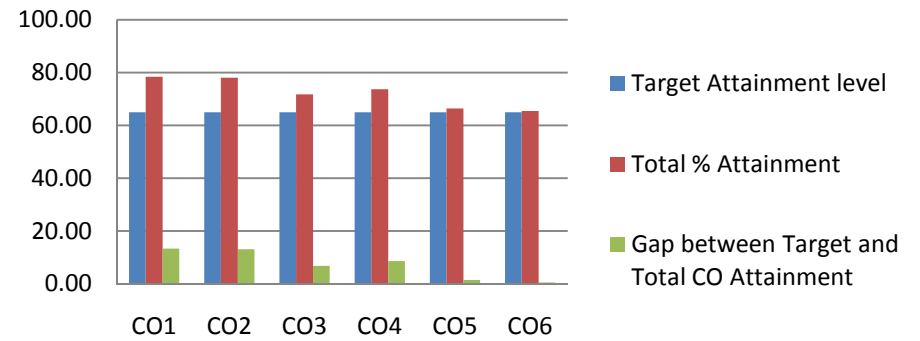
Metrology, Measurement and Control (BMEL501)



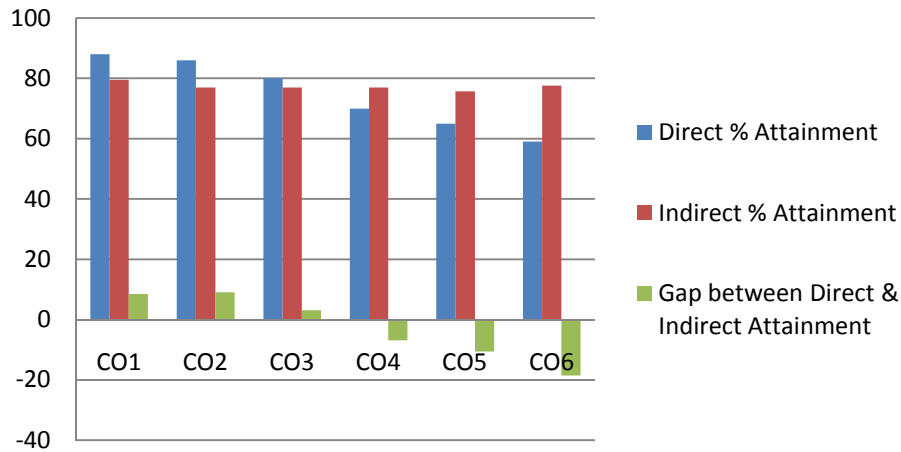
Advance Mechanics of Materials (BMEL503)



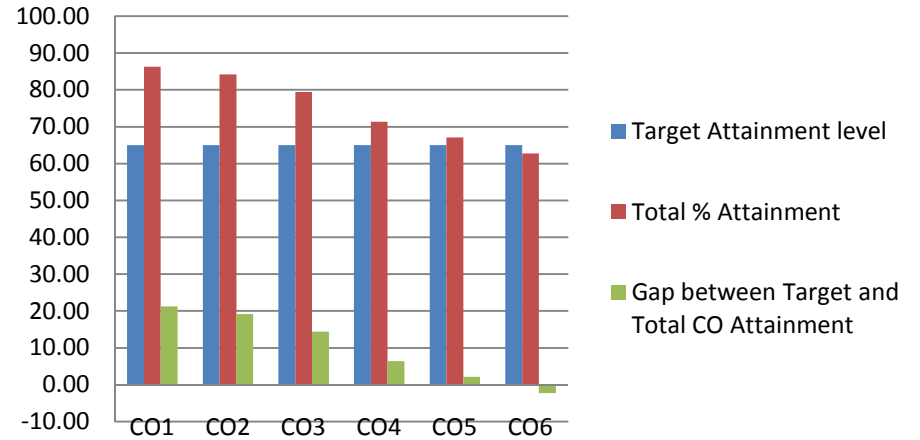
Advance Mechanics of Materials (BMEL503)



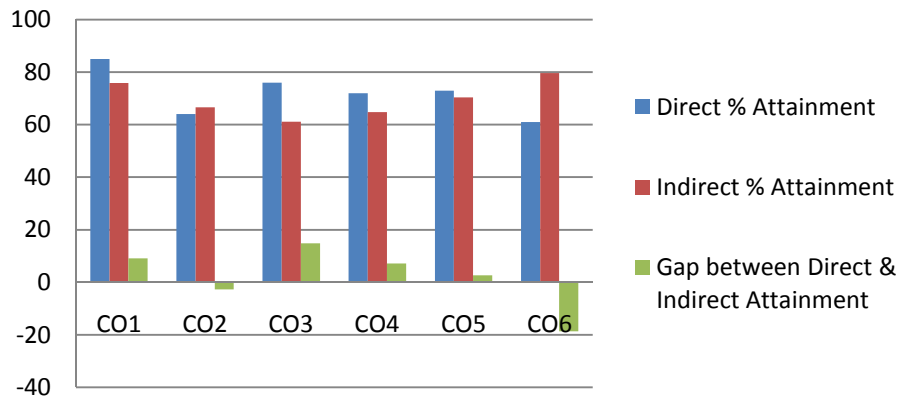
Industrial Engineering (BMEL504)



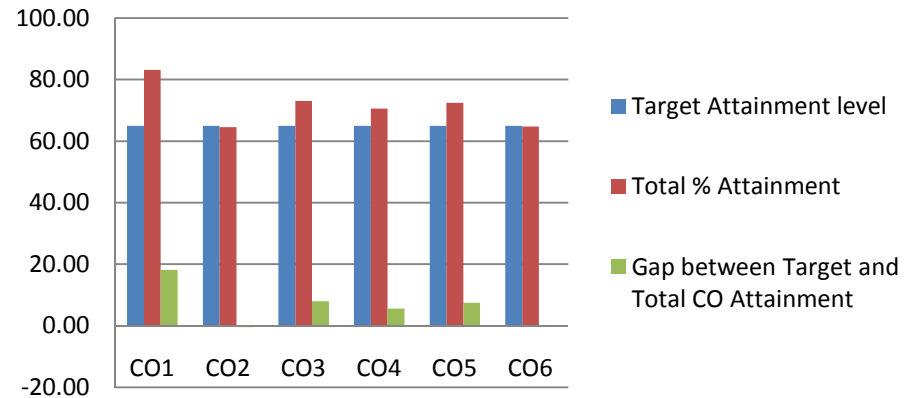
Industrial Engineering (BMEL504)



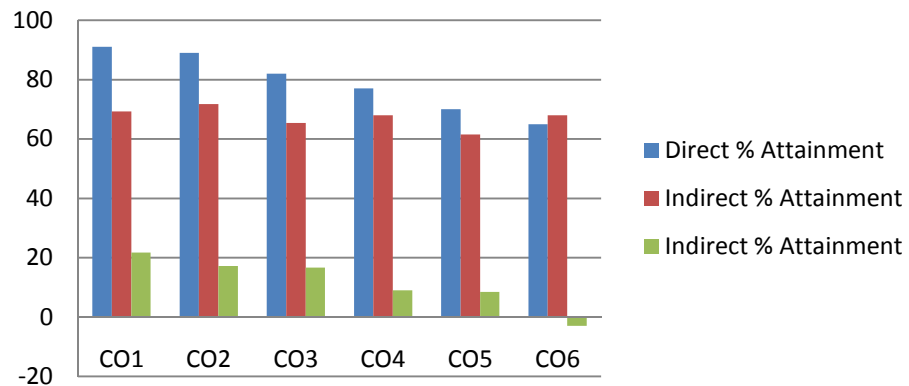
Internal Combustion Engine (BMEL505)



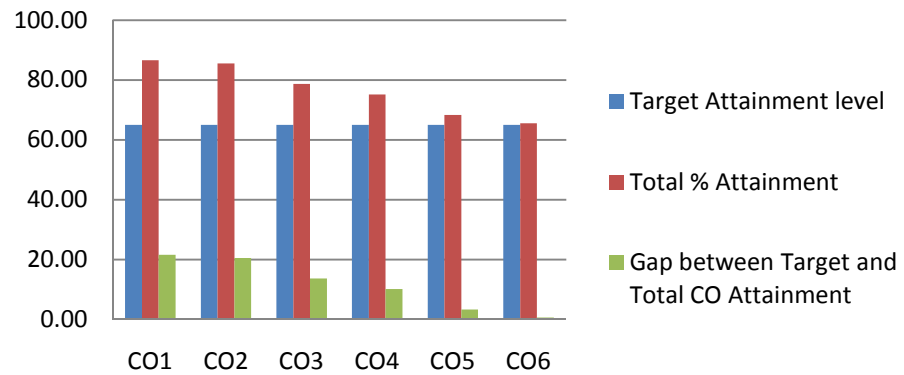
Internal Combustion Engine (BMEL505)



Machine Design-II(BMEL506)

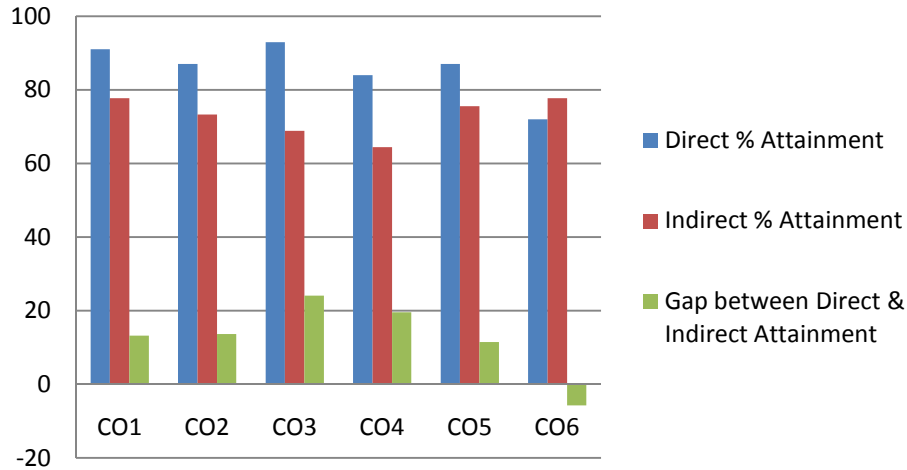


Machine Design-II(BMEL506)

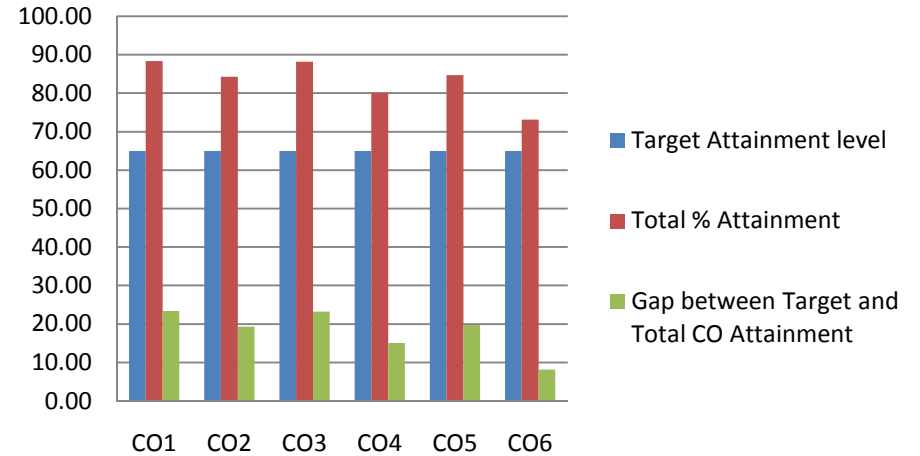


Mechanical 7th Semester Gap Analysis Via Plots

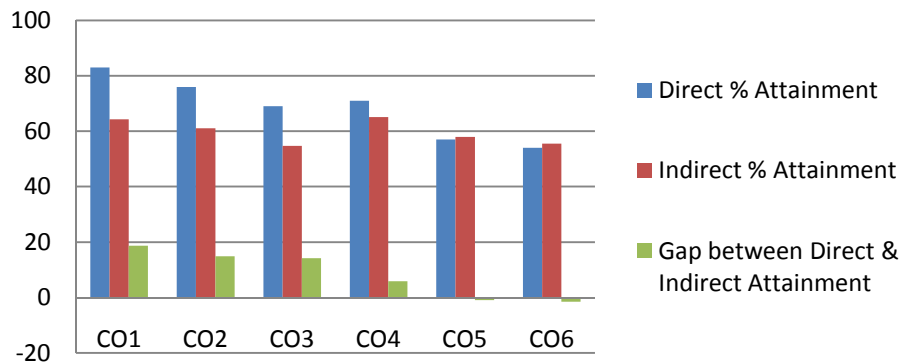
Machine Design-III (BMEL701)



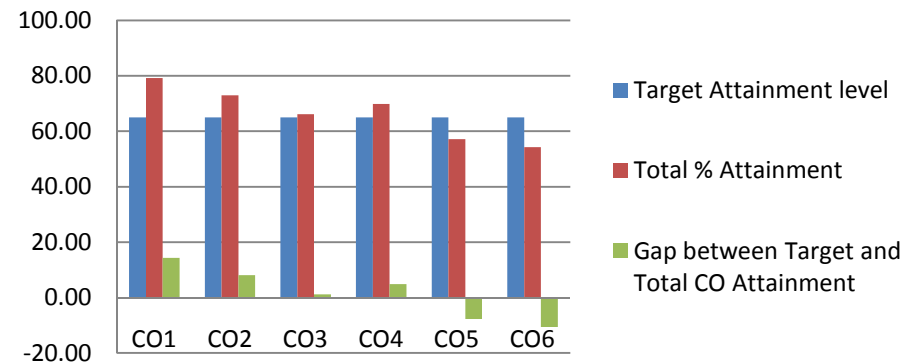
Machine Design-III (BMEL701)



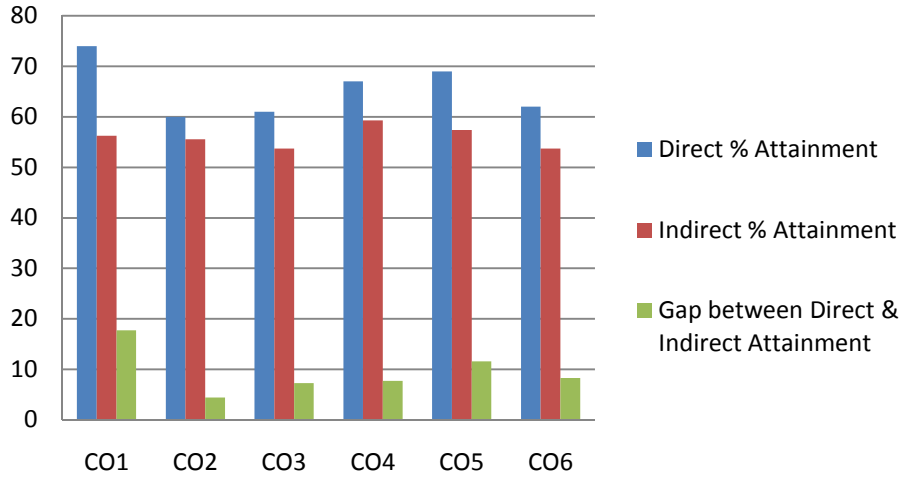
Refrigeration & Air- Conditioning (BMEL702)



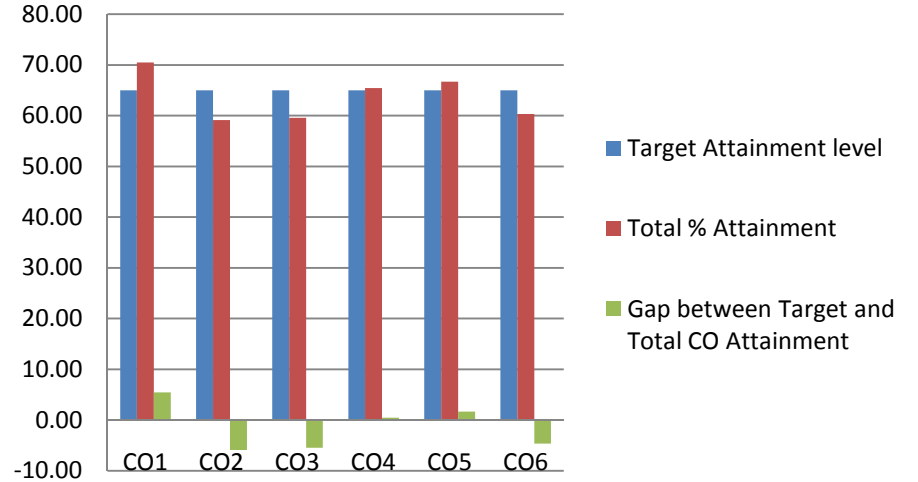
Refrigeration & Air- Conditioning (BMEL702)



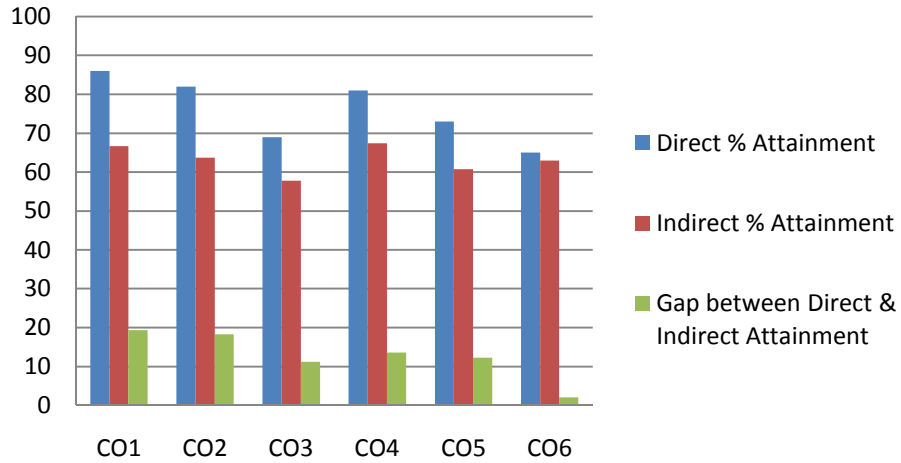
Robotics & Mechatronics (BMEL703)



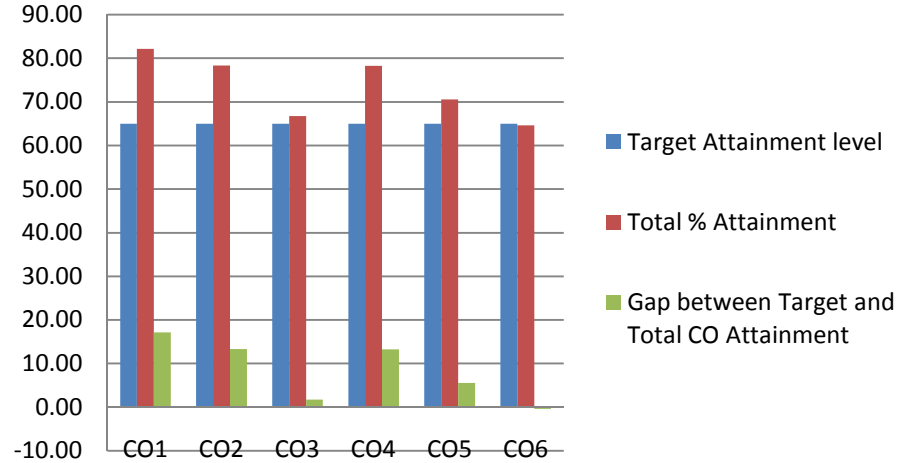
Robotics & Mechatronics (BMEL703)



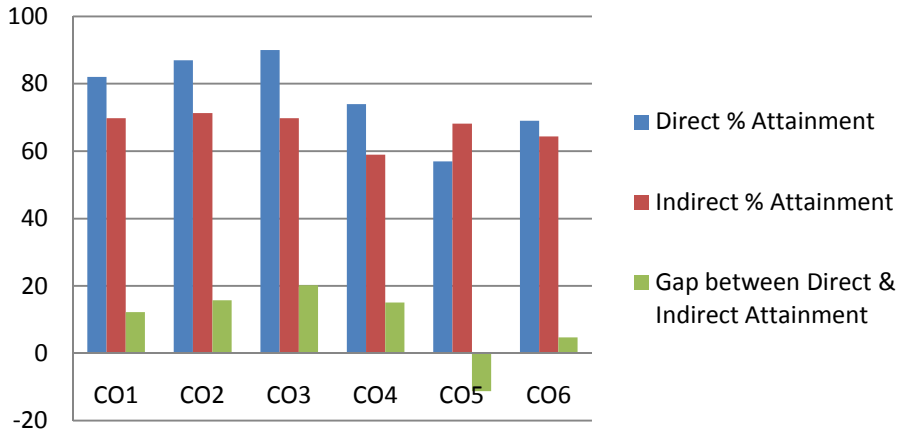
Heat & Mass Transfer (BMEL704)



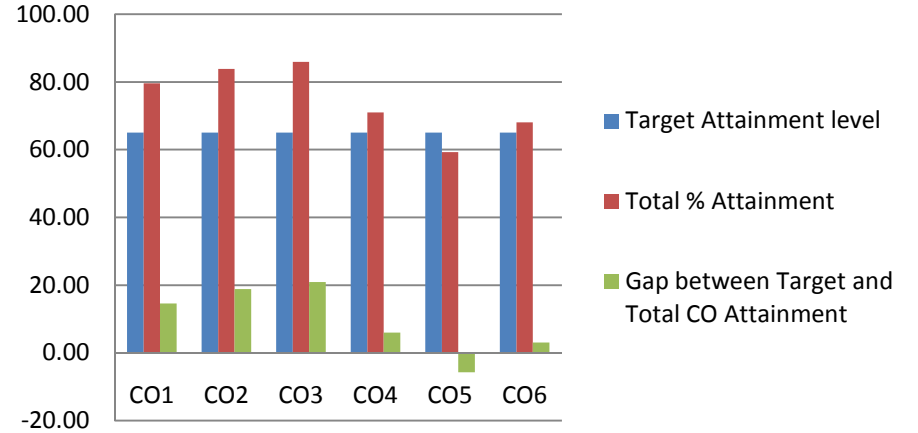
Heat & Mass Transfer (BMEL704)



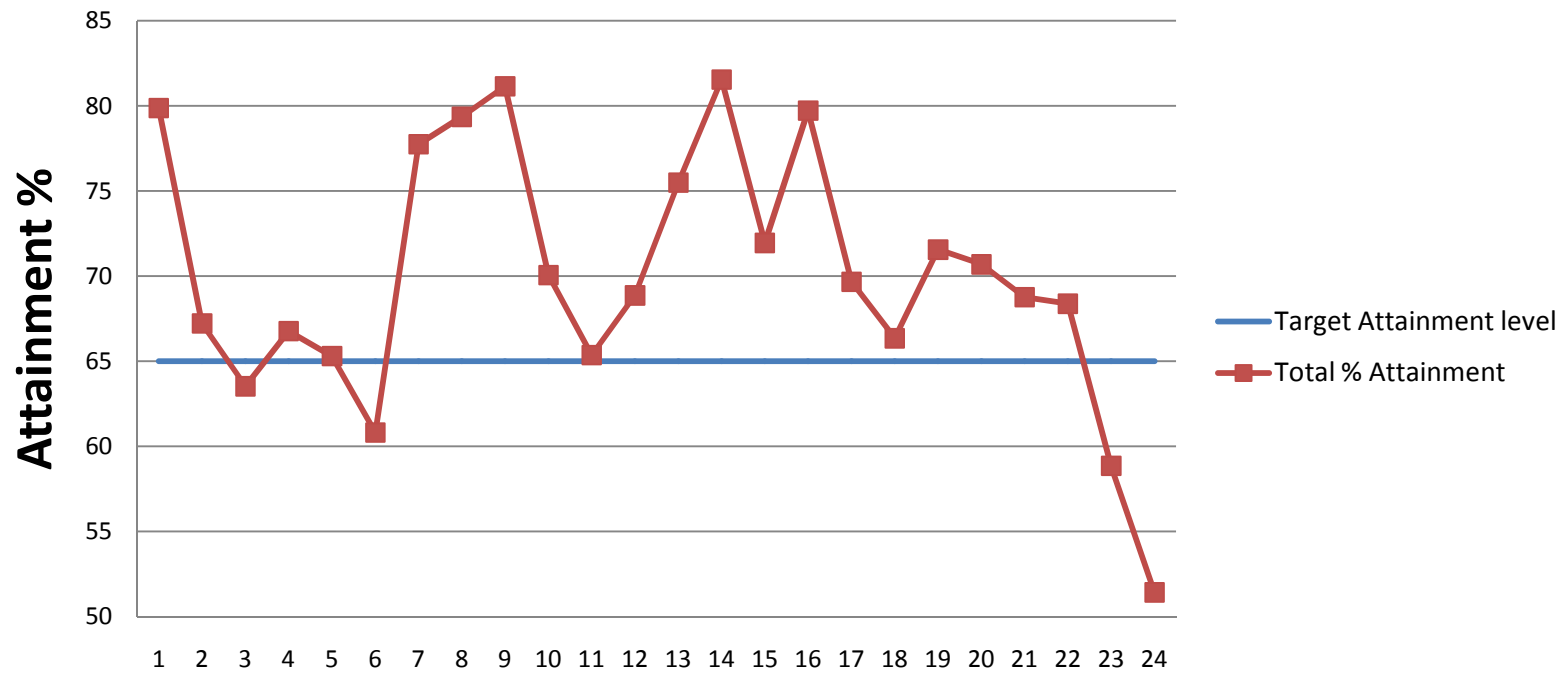
Non-conventional energy sources (BMEL705)



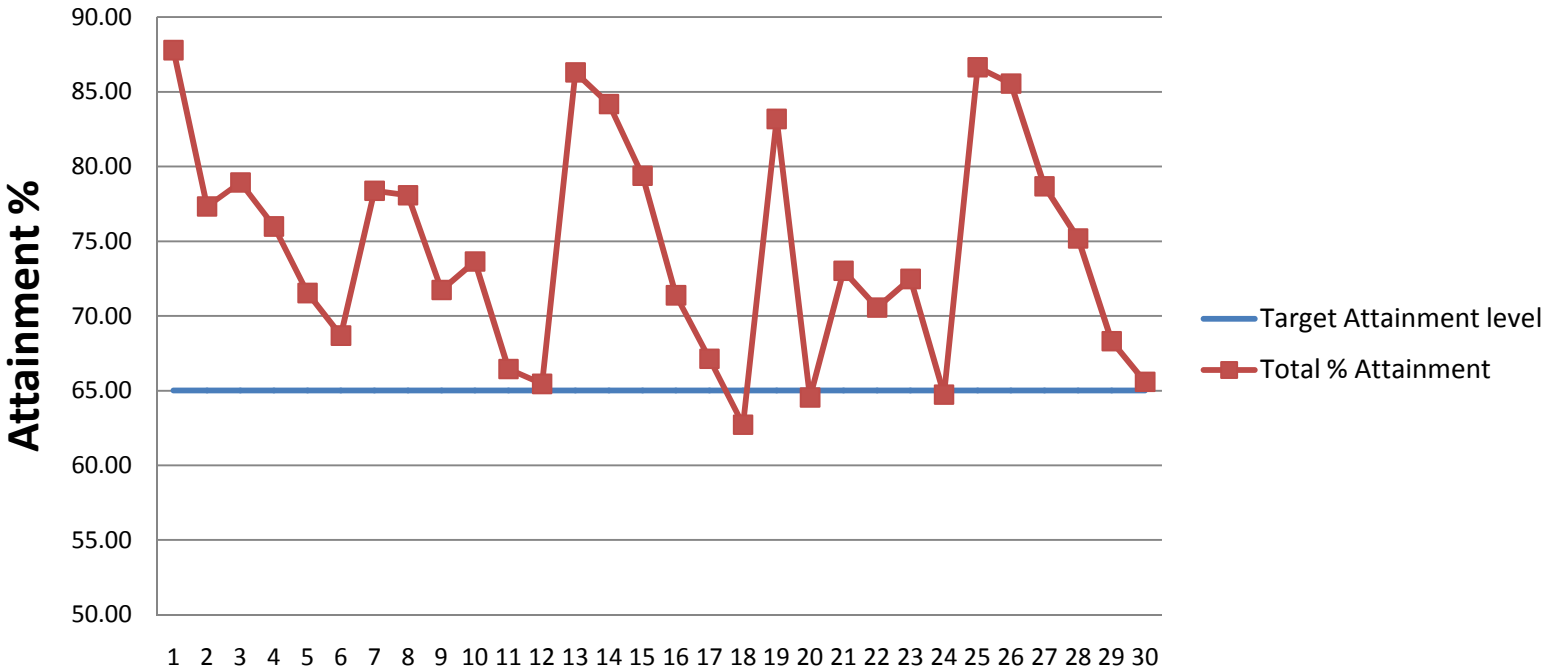
Non-conventional energy sources (BMEL705)



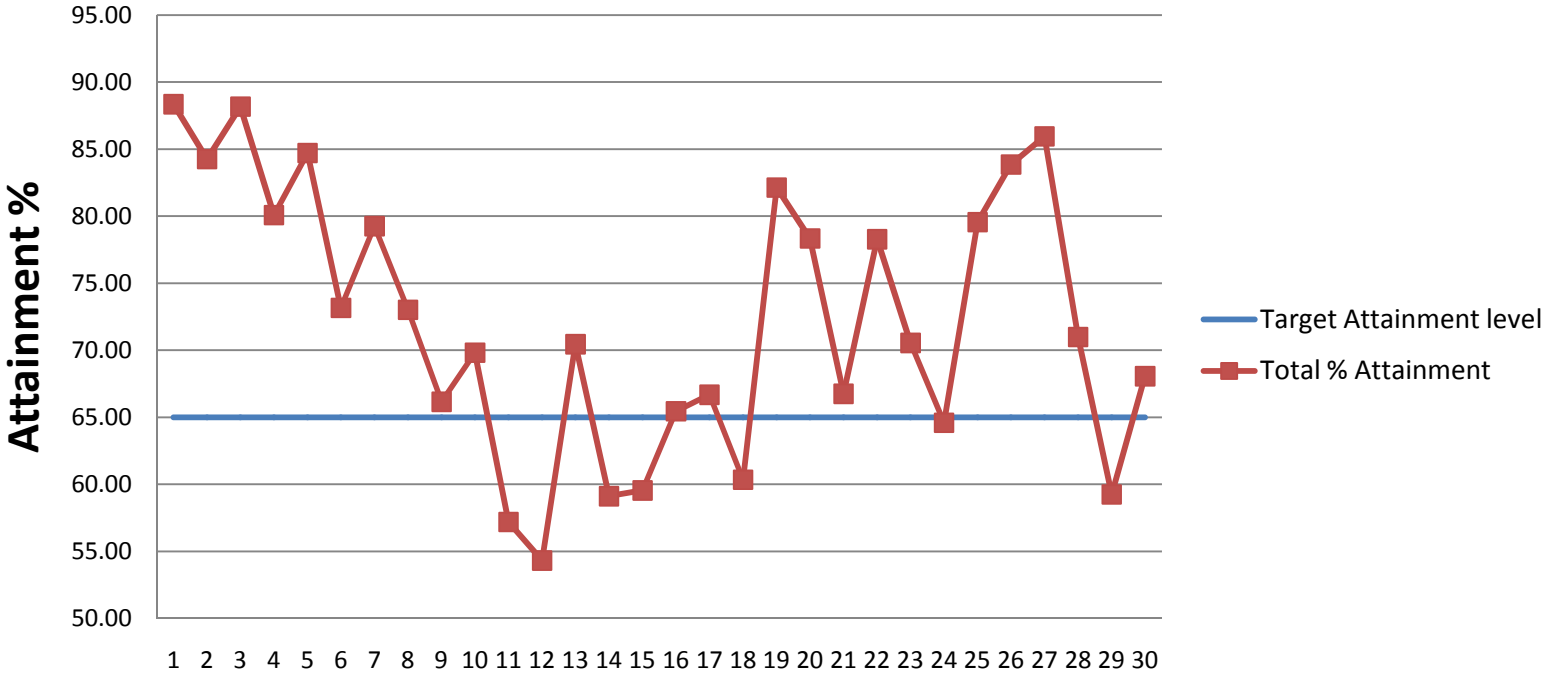
Mechanical 3rd Semester Deviation From The Target Level



Mechanical 5th Semester Deviation From The Target Level



Mechanical 7th Semester Deviation From The Target Level



CO Attainment Data Analysis

After critically reviewing COs and their Attainment for all Courses the following are the key findings-

Reasons for Low Direct Attainment

1. Course outcomes were not framed correctly for some of the subjects.
2. Few question papers were not set, keeping in mind course outcomes of those subjects.
3. Question paper did not cover all the course outcomes in the few subjects.
4. In some cases target Value set was too high for students to attain.
5. The target value set for the different level COs was same.
6. Target value set for different subjects was also same

Reasons for Low Indirect Attainment

1. Low awareness among students towards importance of OBE and COs.
2. Use of only one method i.e. feedback, to calculate indirect CO attainment.
3. Less number of participation of the students in the process.

Corrective Actions Required-

1. Revision of all COs keeping in mind the syllabus and levels of Blooms modified taxonomy.
2. Setting the questions in the paper covering all levels of COs.
3. VAL -using Variable attainment Level for setting target for different COs of the same subject.
4. VTL -using Variable target Level for setting target for COs of the different subject.
5. Increasing awareness among students towards OBE and COs.