



POORNIMA

COLLEGE OF ENGINEERING

Promoted by Shanti Education Society, Affiliated to Rajasthan Technical University & Approved by AICTE

Department of Civil Engineering

Session 2021-22

CO, PO and PSO Target and Attainment and Observations and Action Taken Report (CE)

1.1 CO-Target and Attainment

S. No.	Course Code	Course Name	Batch	Year	Average Target	Cumulative Attainment
1	1FY2-01	Engineering Mathematics-I	2021-25	I Year	2	1.05
2	1FY2-02	Engineering Physics			2	1.25
3	1FY1-05	Human Values			2.11	1.93
4	1FY3-06	Programming for Problem Solving			2	1.36
5	1FY3-09	Basic Civil Engineering			1.66	1.38
6	1FY2-20	Engineering Physics Lab			1.9	1.84
7	1FY1-23	Human Values Activities and Sports			1.75	1.61
8	1FY3-24	Computer Programming Lab			2	1.83
9	1FY3-27	Basic Civil Engineering Lab			2	1.44
10	1FY3-28	Computer Aided Engineering Graphics			1.68	1.63
11	2FY2-01	Engineering Mathematics-II			2.12	1.1
12	2FY2-03	Engineering Chemistry			2	1.27
13	2FY1-04	Communication Skills			2	1.49
14	1FY3-07	Basic Mechanical Engineering			1.53	1.02
15	2FY3-08	Basic Electrical Engineering			1.83	1.38
16	2FY2-21	Engineering Chemistry Lab			1.87	1.6
17	2FY1-22	Language Lab			2	1.69
18	2FY3-26	Basic Electrical Engineering Lab			2.05	1.71
19	1FY3-25	Manufacturing Practices Workshop			1.9	1.86
20	2FY3-29	Computer Aided Machine Drawing			1.8	1.66
21	3CE2-01	Advance Engineering Mathematics-I	2020-24	II Year	1.62	1.23
22	3CE1-02	Technical Communication			1.7	1.61
23	3CE3-04	Engineering Mechanics			1.93	1.78
24	3CE4-05	Surveying			1.9	1.28
25	3CE4-06	Fluid Mechanics			2.18	1.81
26	3CE4-07	Building Materials and Construction			1.53	1.33
27	3CE4-08	Engineering Geology			1.72	1.47
28	3CE4-21	Surveying Lab			1.88	1.77
29	3CE4-22	Fluid Mechanics Lab			1.94	1.76
30	3CE4-23	Computer Aided Building Design Lab			1.84	1.5
31	3CE4-24	Civil Engineering Materials Lab			1.83	1.7
32	3CE4-25	Geology Lab			1.92	1.43



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33	4CE2-01	Advance Engineering Mathematics-II			1.65	-
34	4CE1-03	Managerial Economics & Financial			1.94	-
35	4CE3-04	Basic Electronics for Civil Engineering Applications			1.86	-
36	4CE4-05	Strength of Materials			2.06	-
37	4CE4-06	Hydraulics Engineering			1.69	-
38	4CE4-07	Building Planning			1.48	-
39	4CE4-08	Concrete Technology			1.97	-
40	4CE4-21	Material Testing Lab			1.73	-
41	4CE4-22	Hydraulics Engineering Lab			1.94	-
42	4CE4-23	Building Drawing			1.89	-
43	4CE4-24	Advanced Surveying Lab			1.83	-
44	4CE4-25	Concrete Lab			1.76	-
45	5CE3-01	Construction Technology And Equipment			1.61	1.46
46	5CE4-02	Structure Analysis- I			2.09	1.73
47	5CE4-03	Design Of Concrete Structures			1.82	1.23
48	5CE4-04	Geotechnical Engineering			1.9	1.63
49	5CE4-05	Water Resources Engineering			1.86	1.49
50	5CE5-12	Disaster Management			1.85	1.74
51	5CE5-13	Town Planning			2.2	2.07
52	5CE5-14	Repair And Rehabilitation of Structures			2.38	2.06
53	5CE5-15	Ground Improvement Technique			1.84	1.59
54	5CE4-21	Concrete Structures Design			2.11	1.43
55	5CE4-22	Geotechnical Engineering Lab			1.43	1.17
56	5CE4-23	Water Resource Engineering Design Lab			2	1.81
57	6CE03-01	Wind & Seismic Analysis	2019-23	II Year	1.83	1.74
58	6CE4-02	Structural Analysis-II			1.63	1.12
59	6CE4-03	Environmental Engineering			2.04	1.75
60	6CE4-04	Design of Steel Structures			1.63	1.27
61	6CE4-05	Estimating and Costing			1.9	1.85
62	6CE5-12	Solid and Hazardous Waste Management			1.68	1.2
63	6CE5-13	Traffic Engineering & Management			1.48	1.1
64	6CE5-14	Bridge Engineering			1.62	1.6
65	6CE5-15	Rock Engineering			1.75	0
66	6CE5-16	GIS & Remote Sensing			1.78	1.38
67	6CE4-21	Environmental Engineering Design and Lab			2	1.95
68	6CE4-22	Steel Structures Design Lab			1.61	1.42
69	6CE4-23	Quantity Surveying And Costing			1.77	1.68
70	6CE4-24	Water and Earth Retaining Structure design lab			1.75	1.45





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71	6CE4- 25	Foundation Design	2018-22	IV Year	1.66	1.58
72	7CE4-01	Transportation Engineering			1.81	1.74
73	7EC6-60.1	Principle of Electronic communication			-	-
74	7EC6.60.2	Micro System Smart Technology			-	-
75	7ME6-60.1	Finite Element Analysis			3	2.8
76	7ME6-60.2	Quality Management			2	1.86
77	7EE6-60.1	Electrical Machines and Drives			2.29	2.29
78	7EE6-60.2	Power Generation Sources			2.5	2.22
79	7CS6-60.1	Quality Management / ISO 9000			2.5	1.9
80	7CS6-60.2	Cyber Security			2.33	2.05
81	7CE4-21	Road Material Testing Lab			1.75	1.43
82	7CE4-22	Professional Practices & Field Engineering Lab			1.88	1.62
83	7CE4-23	Soft Skills Lab			1.73	1.68
84	7CE4-24	Environmental Monitoring and Design Lab			2.41	2.1
85	7CE7-30	Practical Training			2.8	2.8
86	7CE7-40	Seminar			2.57	2.57
87	8CE4-01	Project Planning and Construction Management			1.96	1.87
88	8CS6-60.1	Big Data Analytics (Open Elective-II)			2.25	2.07
89	8CS6-60.2	IPR, Copyright and Cyber Law of India (Open Elective-II)			2.75	2.15
90	8EE6-60.1	Energy Audit and Demand side Management			2.5	2.5
91	8EE6-60.2	Soft Computing			-	-
92	8ME6-60.2	Simulation Modeling and Analysis			2.75	2.75
93	8ME6-60.1	Operations Research			2.75	2.38
94	8EC6.60.1	Industrial and Medical applications of RF Energy			2.43	1.9
95	8EC6-60.2	Robotics and Control			2.83	2.6
96	8CE7-50	Project			1.87	1.87
97	8CE4-21	PPCM Lab			1.85	1.82
98	8CE4-22	Pavement Design Lab			1.61	1.41

1.2 PO and PSO-Target and Attainment

S. No.	PO and PSO	Batch	Year	Average Target	Average Attainment
1	PO1: Engineering knowledge	2020-24	I Year	1.90	1.46
2	PO2: Problem analysis			1.68	1.17
3	PO3: Design/development of solutions			1.78	1.12
4	PO4: Conduct investigations of complex problems.			1.58	1.01
5	PO5: Modern tool usage			2.50	2.17





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6	PO6: The engineer and society			2.00	1.50
7	PO7: Environment and sustainability			2.00	1.44
8	PO8: Ethics			2.00	1.46
9	PO9: Individual and team work.			2.70	2.52
10	PO10: Communication			2.00	1.43
11	PO11: Project management and finance			2.22	1.32
12	PO12: Life-long learning			2.00	1.47
13	PSO1: to plan, design and quality execution of construction			2.00	1.00
14	PSO2: to solve problems related to the all disciplines of Civil engineering			1.80	1.04
15	PSO3: social awareness, interdisciplinary aspects and environmental necessity			1.79	0.97
16	PO1: Engineering knowledge	2019-23	II Year	2.59	1.85
17	PO2: Problem analysis			2.42	1.65
18	PO3: Design/development of solutions			1.83	1.16
19	PO4: Conduct investigations of complex problems.			2.11	1.40
20	PO5: Modern tool usage			1.85	1.28
21	PO6: The engineer and society			1.62	1.47
22	PO7: Environment and sustainability			1.39	1.23
23	PO8: Ethics			1.44	1.20
24	PO9: Individual and team work.			1.60	1.50
25	PO10: Communication			1.68	1.17
26	PO11: Project management and finance			2.33	1.91
27	PO12: Life-long learning			1.86	1.11
28	PSO1: to plan, design and quality execution of construction			1.47	0.81
29	PSO2: to solve problems related to the all disciplines of Civil engineering			1.54	1.11
30	PSO3: social awareness, interdisciplinary aspects and environmental necessity			1.78	1.17
31	PO1: Engineering knowledge	2018-22	III Year	1.92	1.38
32	PO2: Problem analysis			2.31	1.23
33	PO3: Design/development of solutions			1.93	1.40
34	PO4: Conduct investigations of complex problems.			2.00	1.46
35	PO5: Modern tool usage			1.50	1.77
36	PO6: The engineer and society			1.73	2.02
37	PO7: Environment and sustainability			1.64	1.83
38	PO8: Ethics			3.00	2.00
39	PO9: Individual and team work.			2.00	2.07
40	PO10: Communication			1.17	1.87
41	PO11: Project management and finance			2.00	1.53
42	PO12: Life-long learning			1.17	1.65





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43	PSO1: to plan, design and quality execution of construction			1.93	0.99
44	PSO2: to solve problems related to the all disciplines of Civil engineering			1.65	0.73
45	PSO3: social awareness, interdisciplinary aspects and environmental necessity			1.44	0.83
46	PO1: Engineering knowledge	2017-21	IV Year	1.50	1.32
47	PO2: Problem analysis			1.81	1.32
48	PO3: Design/development of solutions			1.36	0.91
49	PO4: Conduct investigations of complex problems.			1.08	0.86
50	PO5: Modern tool usage			0.20	1.00
51	PO6: The engineer and society			1.25	0.97
52	PO7: Environment and sustainability			0.75	0.76
53	PO8: Ethics			1.30	1.08
54	PO9: Individual and team work.			1.67	1.25
55	PO10: Communication			1.20	1.08
56	PO11: Project management and finance			1.60	1.24
57	PO12: Life-long learning			1.45	1.07
58	PSO1: to plan, design and quality execution of construction			1.35	1.03
59	PSO2: to solve problems related to the all disciplines of Civil engineering			0.69	1.01
60	PSO3: social awareness, interdisciplinary aspects and environmental necessity			1.88	0.98

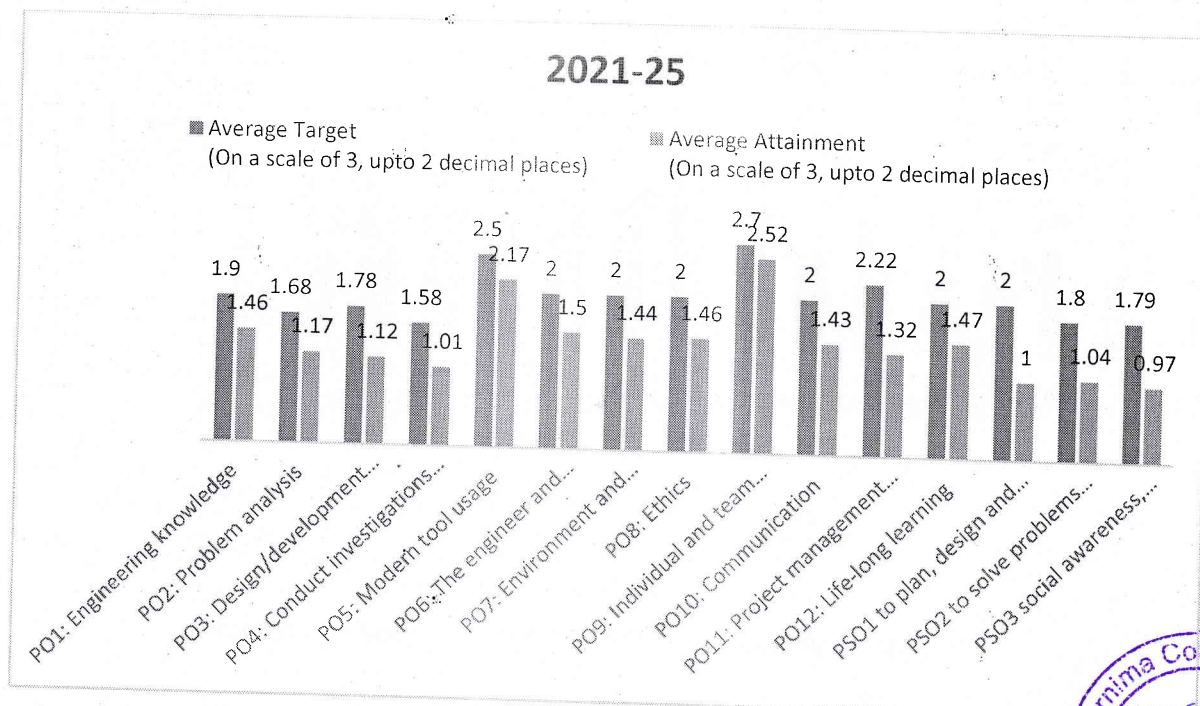


Figure 1.1: Analysis of PO and PSO Attainment (Batch 2021-25)





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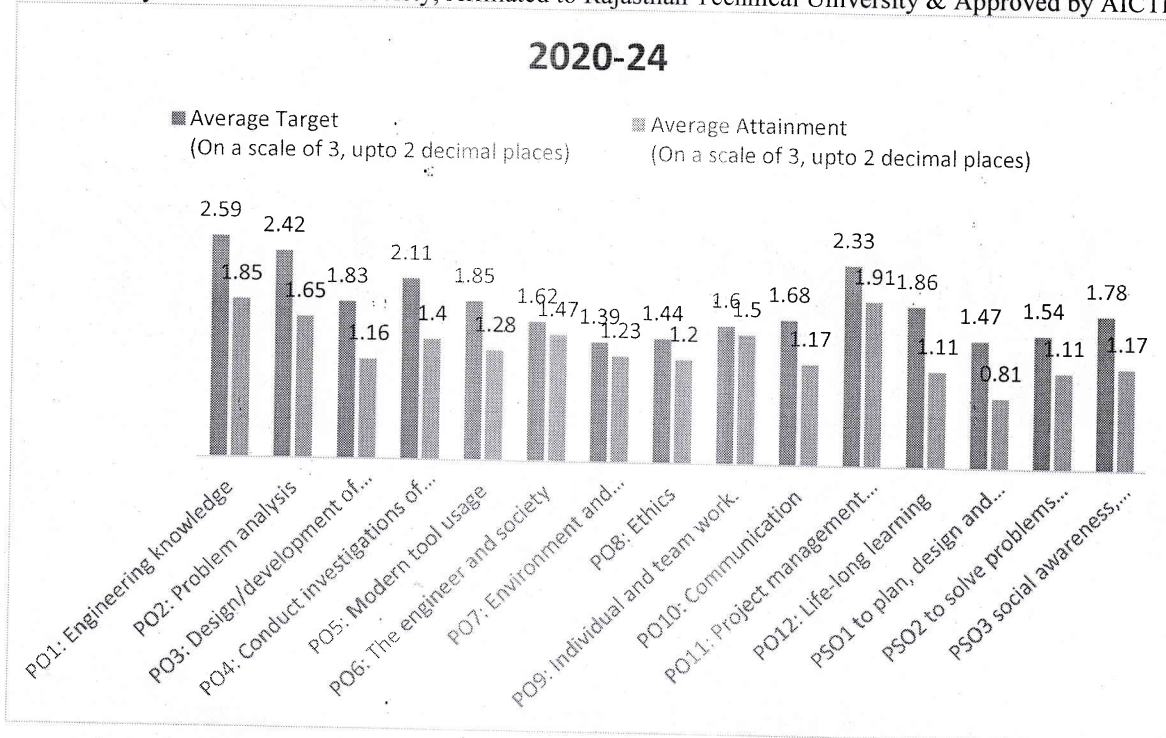


Figure 1.2: Analysis of PO and PSO Attainment (Batch 2020-24)

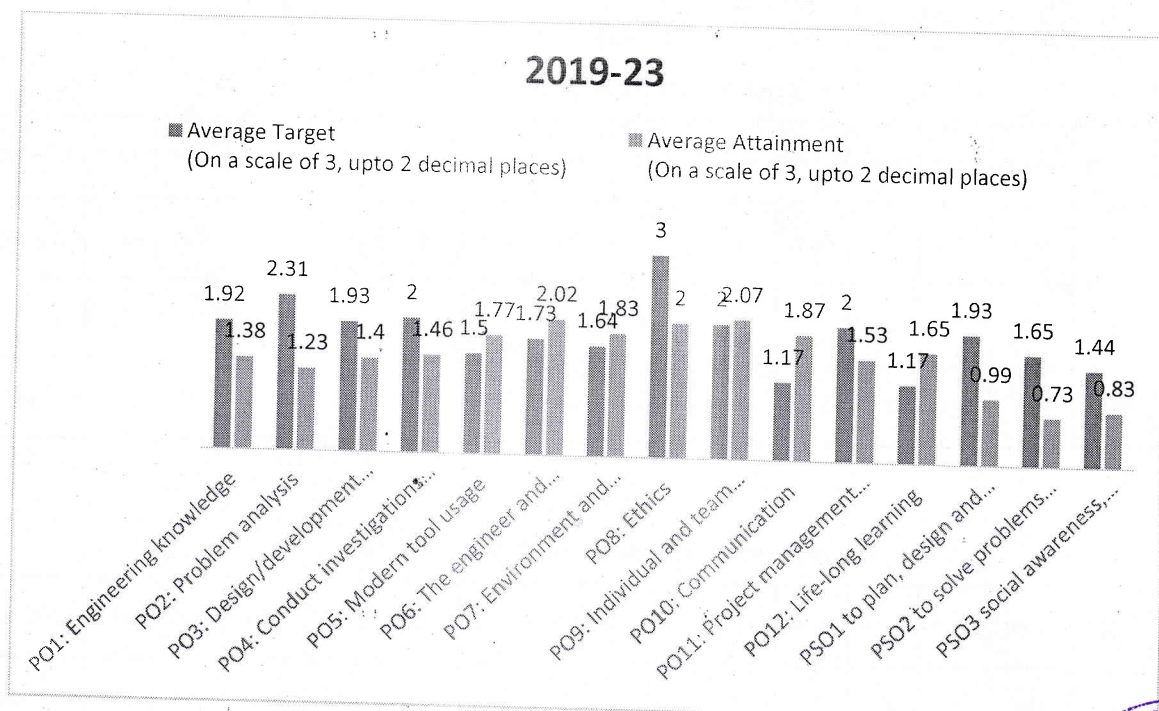


Figure 1.3: Analysis of PO and PSO Attainment (Batch 2019-23)





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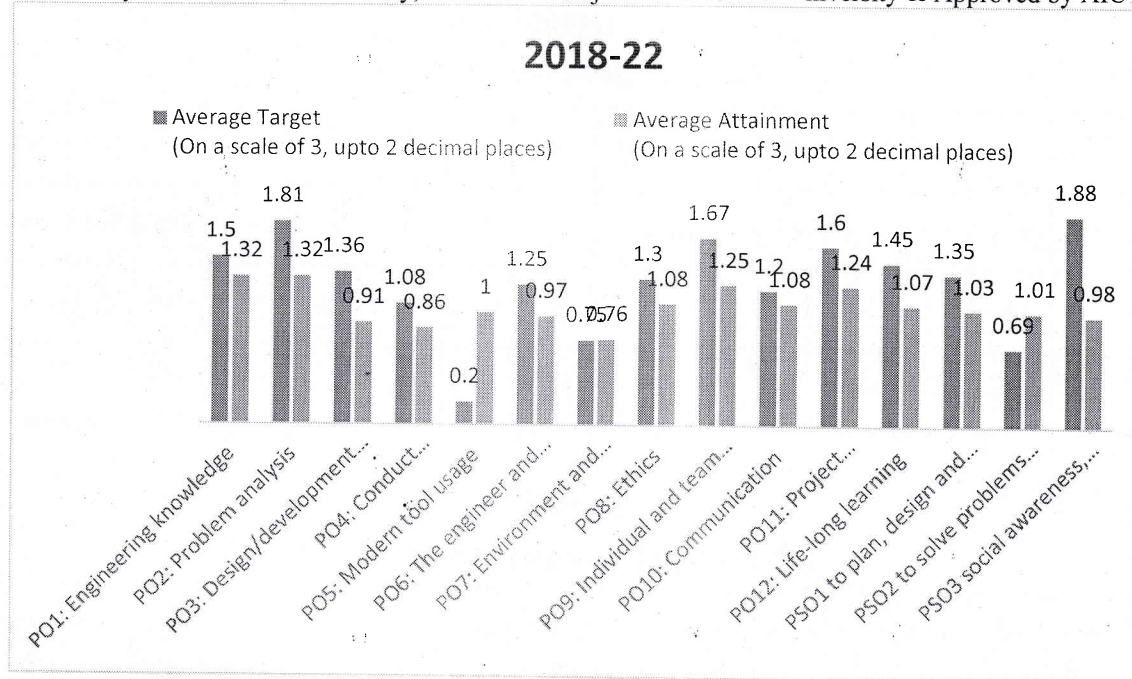


Figure 1.4: Analysis of PO and PSO Attainment (Batch 2018-22)

1.3 Analysis of PO and PSO Attainment

2021-25

Table 1.1: PO Attainment, Target and Gaps

POs / PSOs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO 2	PSO3
Attainment	1.46	1.17	1.12	1.01	2.17	1.50	1.44	1.46	2.52	1.43	1.32	1.47	1.00	1.04	0.97
Target	1.9	1.68	1.78	1.58	2.5	2	2	2.00	2.7	2	2.22	2	2.00	1.80	1.79
Gap	0.44	0.51	0.66	0.57	0.33	0.50	0.56	0.54	0.18	0.57	0.90	0.53	1.00	0.76	0.82

2020-24

Table 1.2: PO Attainment, Target and Gaps

POs / PSOs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO 2	PSO3
Attainment	1.85	1.65	1.16	1.40	1.28	1.47	1.23	1.20	1.50	1.17	1.91	1.11	0.81	1.11	1.17
Target	2.59	2.42	1.83	2.11	1.85	1.62	1.39	1.44	1.6	1.68	2.33	1.86	1.47	1.54	1.78
Gap	0.74	0.77	0.67	0.71	0.57	0.15	0.16	0.24	0.10	0.51	0.42	0.75	0.66	0.43	0.61



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2019-23

Table 1.3: PO Attainment, Target and Gaps

POs / PSOs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO 2	PSO3
Attainment	1.38	1.23	1.4	1.46	1.77	2.02	1.83	2	2.07	1.87	1.53	1.65	0.99	0.73	0.83
Target	1.92	2.31	1.93	2	1.5	1.73	1.64	3	2	1.17	2	1.17	1.93	1.65	1.44
Gap	0.54	1.08	0.53	0.54	0.27	0.29	0.19	1	0.07	0.7	0.47	0.48	0.94	0.92	0.61

2018-22

Table 1.4: PO Attainment, Target and Gaps

POs / PSOs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO 2	PSO3
Attainment	1.32	1.32	0.91	0.86	1.00	0.97	0.76	1.08	1.25	1.08	1.24	1.07	1.03	1.01	0.98
Target	1.5	1.81	1.36	1.08	0.2	1.25	0.75	1.30	1.67	1.2	1.60	1.45	1.35	0.69	1.88
Gap	0.18	0.49	0.45	0.22	0.80	0.28	0.01	0.22	0.42	0.12	0.36	0.38	0.32	0.32	0.90

1.4 Observations

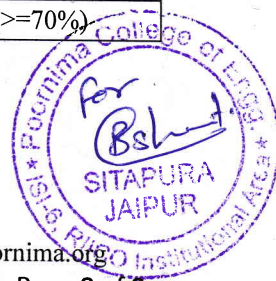
Table 1.5: Achieved Level of PO / PSO (Batch 2021-25)

PO / PSO	Achieved Level
-	Below Average (<50%)
PSO1, PSO2, PSO3	Average (>=50% but <70%)
PO1 - PO12	Above Average (>=70%)

Batch (2021-25): After analysis of table 1.5 of PO / PSO attainment for batch 2021-25, it has been observed that the attainment level of PSO1 PSO2 and PSO3 are on average level (>50% but less than 70%). All POs have achieved above average level (>=70%).

Table 1.6: Achieved Level of PO / PSO (Batch 2020-24)

PO / PSO	Achieved Level
-	Below Average (<50%)
PO2, PO3, PO4, PO5, PO10, PO12, PSO1, PSO3	Average (>=50% but <70%)
PO1, PO6, PO7, PO8, PO9, PO11	Above Average (>=70%)





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Batch (2020-24): After analysis of table 1.6 of PO / PSO attainment for batch 2020-24, it has been observed that the attainment level of PO2, PO3, PO4, PO5, PO10, PO12, PSO1 and PSO3 are attained at average level Average ($\geq 50\%$ but $< 70\%$). PO1, PO6, PO7, PO8, PO9 and PO11 have achieved above average level ($\geq 70\%$).

Table 1.7: Achieved Level of PO / PSO (Batch 2019-23)

PO / PSO	Achieved Level
PSO2	Below Average ($< 50\%$)
PO2, PO8, PSO1, PSO2 and PSO3	Average ($\geq 50\%$ but $< 70\%$)
PO1, PO3, PO4, PO5, PO6, PO7, PO9, PO10, PO11, PO12	Above Average ($\geq 70\%$)

Batch (2019-23): After analysis of table 1.7 of PO / PSO attainment for batch 2019-23, it has been observed that the attainment level of PSO3 is falling below average ($< 50\%$). PO2, PO8, PSO1, PSO2 and PSO3 are attained on average level ($\geq 50\%$ but less than 70%). The attainment level of PO1, PO3, PO4, PO5, PO6, PO7, PO9, PO10, PO11 and PO12 are above average ($\geq 70\%$).

Table 1.8: Achieved Level of PO / PSO (Batch 2018-22)

PO / PSO	Achieved Level
-	Below Average ($< 50\%$)
PSO3	Average ($\geq 50\%$ but $< 70\%$)
PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1 and PSO2	Above Average ($\geq 70\%$)

Batch (2018-22): After analysis of table 1.8 of PO / PSO attainment for batch 2018-22, it has been observed that the attainment level of PSO3 is falling on average level ($\geq 50\%$ but less than 70%). PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12, PSO1 and PSO2 are falling on above average level ($\geq 70\%$).

1.5 Actions Taken

- Department focused more on design based questions in numerical subjects, emphasized on design software to solve the real life problem based projects to enhance PO2, PO3, PO4 and PSO2.
- Department targeted to have more case studies of local problems in groups of students and provide engineering solutions for the betterment of the society to boost the attainment levels of PO6, PO9 and PSO3.
- Department emphasized more on GD, PI, Debate, Play in English, mock drive and more emphasis on design software to create new entrepreneurs in civil engineering works to boost the levels of PO10, PO12 and PSO1.
- After analyzing POs / PSOs, it was found that PO5 needs to improved therefore, department decided that faculty need to teach few topics in theoretical subjects via PPTs, videos and other ICT tools and in labs they can utilize virtual lab platforms developed by NPTEL and IITs.

