POORNIMA
COLLEGE OF ENGINEERING

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

Department of Electronics and Communication Engineering
Session 2021-22
CO, PO and PSO Target and Attainment and Observations and Action Taken Report (ECE)

1.1 CO-Target and Attainment

S. No.	Course Code	Course Name	Batch	Year	Average Target	Cumulative Attainment
1	1FY2-01	Engineering Mathematics-I			2.9	2.32
2	1FY2-02	Engineering Physics			2.99	1.48
3	1FY1-05	Human Values			2.82	1.99
4	1FY3-06	Programming for Problem Solving			2.04	1.78
5	1FY3-09	Basic Civil Engineering			2.8	1.89
6	1FY2-20	Engineering Physics Lab			2.7	1.64
7	1FY1-23	Human Values Activities and Sports			2.65	1.32
8	1FY3-24	Computer Programming Lab			2.65	1.86
9	1FY3-27	Basic Civil Engineering Lab			2.73	2.67
10	1FY3-28	Computer Aided Engineering Graphics			2.59	1.87
11	2FY2-01	Engineering Mathematics-II			2.09	1.48
12	2FY2-03	Engineering Chemistry			2.1	1.99
13	2FY1-04	Communication Skills			2.95	1.78
14	1FY3-07	Basic Mechanical Engineering	2021-25	I Year	2.87	1.78
15	2FY3-08	Basic Electrical Engineering			2.8	1.67
16	2FY2-21	Engineering Chemistry Lab			2.9	1.82
17	2FY1-22	Language Lab			2.78	1.67
18	2FY3-26	Basic Electrical Engineering Lab			2.33	2.7
19	1FY3-25	Manufacturing Practices Workshop			2.98	1.53
20	2FY3-29	Computer Aided Machine Drawing			2.82	1.99
21	3EC2-01	Advanced Engineering Mathematics-I			2.04	1.78
22	3EC1-03	Managerial Economics and Financial Accounting			2.8	1.89
23	3EC4-04	Digital System Design			2.7	1.64
24	3EC4-05	Signal & System			2.65	1.32
25	3EC4-06	Network Theory			2.65	1.86
26	3EC4-07	Electronics Devices			2.8	1.89
27	3EC4-21	Electronics Devices Lab			2.7	1.64

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28	3EC4-22	Digital System Design Lab			2.65	1.32
29	3EC4-23	Signal Processing Lab			2.65	1.86
30	3EC4-24	Computer Programming Lab-I			2.73	2.67
31	3EC7-30	Industrial Training			2.59	1.87
32	4EC2-01	Advanced Engineering Mathematics-II			2.09	1.48
33	4EC1-02	Technical Communication			2.1	1.99
34	4EC4-04	Analog Circuits			2.95	1.78
35	4EC4-05	Microcontrollers			2.04	1.64
36	4EC3-06	Electronics Measurement & Instrumentation			2.69	1.78
37	4EC4-07	Analog and Digital Communication			2.9	2.32
38	4EC4-21	Analog and Digital Communication Lab			2.99	1.48
39	4EC4-22	Analog Circuits Lab			2.82	1.99
40	4EC4-23	Microcontrollers Lab			2.04	1.78
41	4EC4-24	Electronics Measurement & Instrumentation Lab			2.8	1.89
42	5EC3-01	Computer Architecture			2.7	1.64
43	5EC4-02	Electromagnetic Wave			2.8	1.67
44	5EC4-03	Control System	2020-24	II Year	2.9	1.82
45	5EC4-04	Digital Signal Processing			2.78	1.67
46	5EC4-05	Microwave Theory & Techniques			2.33	2.7
47	5EC5-12	Satellite Communication			2.98	1.53
48	5EC4-21	RF Simulation Lab			2.82	1.99
49	5EC4-22	Digital Signal Processing Lab			2.04	1.78
50	5EC4-23	Microwave Lab			2.8	1.89
51	5EC7-30	Industrial Training			2.7	1.64
52	6EC 3-01	Power Electronics			2.65	1.32
53	6EC 4-02	Computer Network			2.65	1.86
54	6EC 4-03	Fiber Optics Communications			2.8	1.89
55	6EC 4-04	Antennas & Propagation			2.7	1.64
56	6EC 4-05	Information Theory & Coding			2.65	1.32
57	6EC 5-11	Introduction to MEMS (Elective-1)			2.65	1.86
58	6EC 5-12	Nano Electronics (Elective-2)	2019-23	III Year	2.73	2.67
59	6EC 4-21	Computer Network Lab			2.82	1.99
60	6EC 4-22	Antenna & Wave Propagation Lab			2.04	1.78
61	6EC 4-23	Electronics Design Lab			2.8	1.89
62	6EC 4-24	Power Electronics Lab			2.7	1.64
63	7EC5-11	VLSI Design			2.65	1.32

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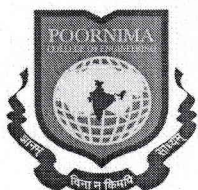| 64	7EC5-13	CMOS design			2.65	1.86
65	7EC7-21	VLSI Design Lab			2.73	2.67
66	7EC4-22	Advance communication lab			2.59	1.87
67	7EC4-23	Optical Communication Lab			2.09	1.48
68	7EC7-30	Industrial Training			2.1	1.99
69	7EC7-40	Practical Training Seminar			2.95	1.78
70	7EE6-60.1	Electrical Machines and Drives			2.87	1.78
71	7EE6-60.2	Power Generation Sources			2.8	1.67
72	7CE6-60.1	Environmental Impact Analysis (EIA)			2.82	1.99
73	7CE6-60.2	Disaster Management (DM)			2.04	1.78
74	7CS6-60.1	Quality Management / ISO 9000 (Open Elective-1)			2.8	1.89
75	7CS6-60.2	Cyber Security (Open Elective-1)			2.7	1.64
76	7ME6-60.1	Finite Element Analysis			2.65	1.32
77	7ME6-60.2	Quality Management			2.65	1.86
78	8EC5-11	Artificial Intelligence and Expert Systems			2.73	2.67
79	8EC5-12	Digital Image and Video Processing			2.59	1.87
80	8ME6-60.2	Simulation Modeling and Analysis			2.09	1.48
81	8ME6-60.1	Operations Research			2.1	1.99
82	8EE6-60.1	Energy Audit and Demand side Management			2.95	1.78
83	8EE6-60.2	Soft Computing	2018-22	IV Year	2.87	1.78
84	8CE6-60.1	Composite Materials (CM)			2.8	1.67
85	8CE6-60.2	Fire and Safety Engineering (F&SE)			2.95	1.78
86	8CS6-60.1	Big Data Analytics (Open Elective-II)			2.87	1.78
87	8CS6-60.2	IPR, Copyright and Cyber Law of India (Open Elective-II)			2.8	1.67
88	8EC4-22	Skill Development Lab			2.82	1.99
89	8EC7-50	Project			2.65	1.86
90	8EC4-21	Internet of Things (IOT) Lab			2.73	2.67

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1.2 PO and PSO-Target and Attainment

S. No.	PO and PSO	Batch	Year	Average Target	Average Attainment
1	PO1: Engineering knowledge			1.00	0.53
2	PO2: Problem analysis			1.00	0.55
3	PO3: Design/development of solutions			1.00	0.33
4	PO4: Conduct investigations of complex Problems.			2.00	0.88
5	PO5: Modern tool usage			2.00	0.90
6	PO6: The engineer and society			2.00	1.20
7	PO7: Environment and sustainability			3.00	1.66
8	PO8: Ethics	2021-25	I Year	2.00	0.50
9	PO9: Individual and team work.			2.00	1.23
10	PO10: Communication			2.00	1.35
11	PO11: Project management and finance			2.00	1.31
12	PO12: Life-long learning			2.00	1.12
13	PSO1 (Basic knowledge of core Electronics & Communication Engineering)			1.53	0.35
14	PSO2 (Modern IT tools)			1.82	0.54
15	PSO3 (Interpersonal Skills & Leadership qualities)			1.76	0.62
16	PO1: Engineering knowledge			1.38	0.40
17	PO2: Problem analysis			2.00	1.29
18	PO3: Design/development of solutions			2.00	1.21
19	PO4: Conduct investigations of complex problems.			1.33	0.55
20	PO5: Modern tool usage			1.19	0.37
21	PO6: The engineer and society			1.74	1.10
22	PO7: Environment and sustainability			2.40	1.29
23	PO8: Ethics	2020-24	II Year	2.00	1.32
24	PO9: Individual and team work.			2.00	1.17
25	PO10: Communication			3.00	1.78
26	PO11: Project management and finance			3.00	1.67
27	PO12: Life-long learning			2.00	1.54
28	PSO1 (Basic knowledge of core Electronics & Communication Engineering)			2.00	1.28
29	PSO2 (Modern IT tools)			2.00	1.30
30	PSO3 (Interpersonal Skills & Leadership qualities)			1.76	0.62
31	PO1: Engineering knowledge			1.38	0.40
32	PO2: Problem analysis			2.00	1.29
33	PO3: Design/development of solutions			2.00	1.21
34	PO4: Conduct investigations of complex problems.	2019-23	III Year	2.00	1.23
35	PO5: Modern tool usage			2.00	1.32
36	PO6: The engineer and society			2.00	1.34

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37	PO7: Environment and sustainability			2.00	1.50
38	PO8: Ethics			3.00	2.56
39	PO9: Individual and team work.			2.00	2.04
40	PO10: Communication			1.33	0.55
41	PO11: Project management and finance			1.19	0.37
42	PO12: Life-long learning			2.00	1.17
43	PSO1 (Basic knowledge of core Electronics & Communication Engineering)			3.00	1.78
44	PSO2 (Modern IT tools)			3.00	1.67
45	PSO3 (Interpersonal Skills & Leadership qualities)			2.00	1.47
46	PO1: Engineering knowledge			2.00	1.37
47	PO2: Problem analysis			2.89	2.79
48	PO3: Design/development of solutions			1.38	0.4
49	PO4: Conduct investigations of complex problems.			2.00	1.29
50	PO5: Modern tool usage			2.00	1.21
51	PO6: The engineer and society			2.00	1.23
52	PO7: Environment and sustainability			2.00	1.72
53	PO8: Ethics	2018-22	IV Year	2.00	1.74
54	PO9: Individual and team work.			2.00	1.24
55	PO10: Communication			2.00	1.50
56	PO11: Project management and finance			2.00	2.04
57	PO12: Life-long learning			2.00	1.47
58	PSO1 (Basic knowledge of core Electronics & Communication Engineering)			2.00	1.32
59	PSO2 (Modern IT tools)			2.00	1.17
60	PSO3 (Interpersonal Skills & Leadership qualities)			3.00	1.78

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

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2020-24

Figure 1.2: Analysis of PO and PSO Attainment (Batch 2020-24)
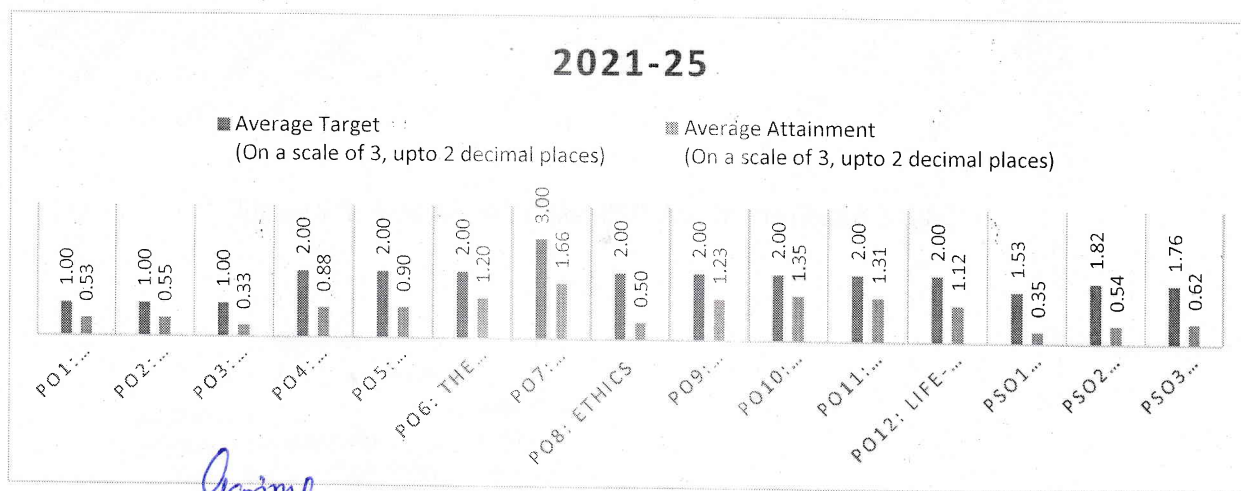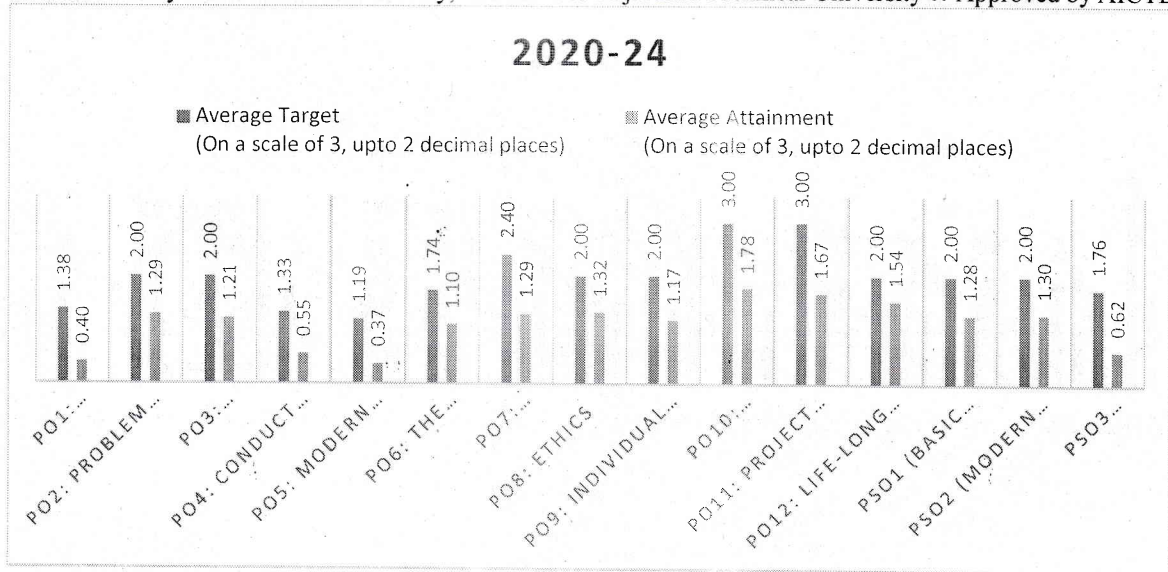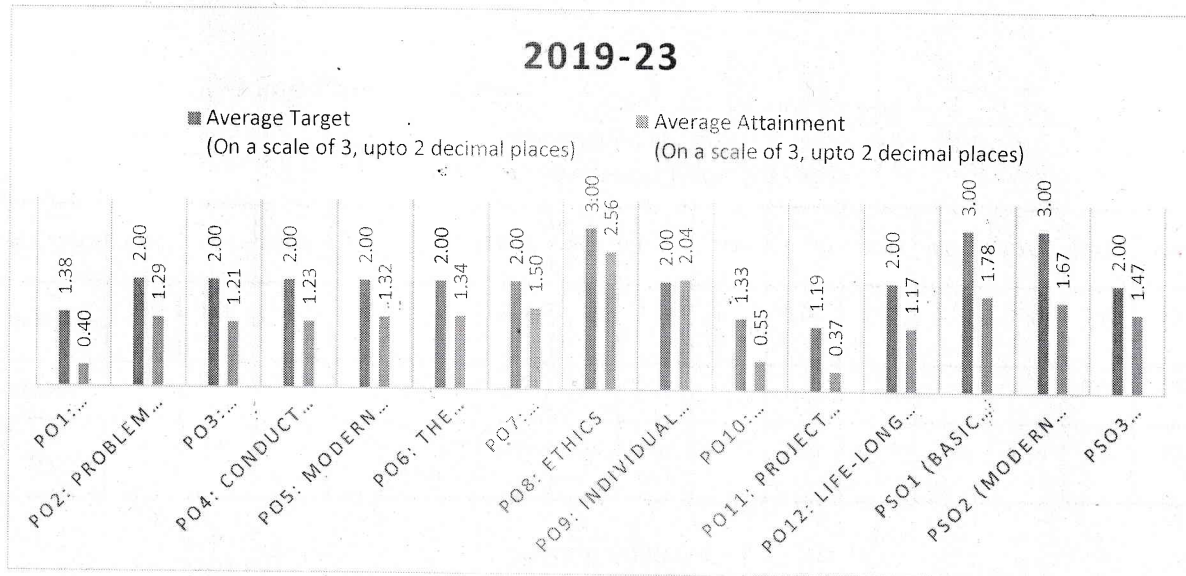
2019-23

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

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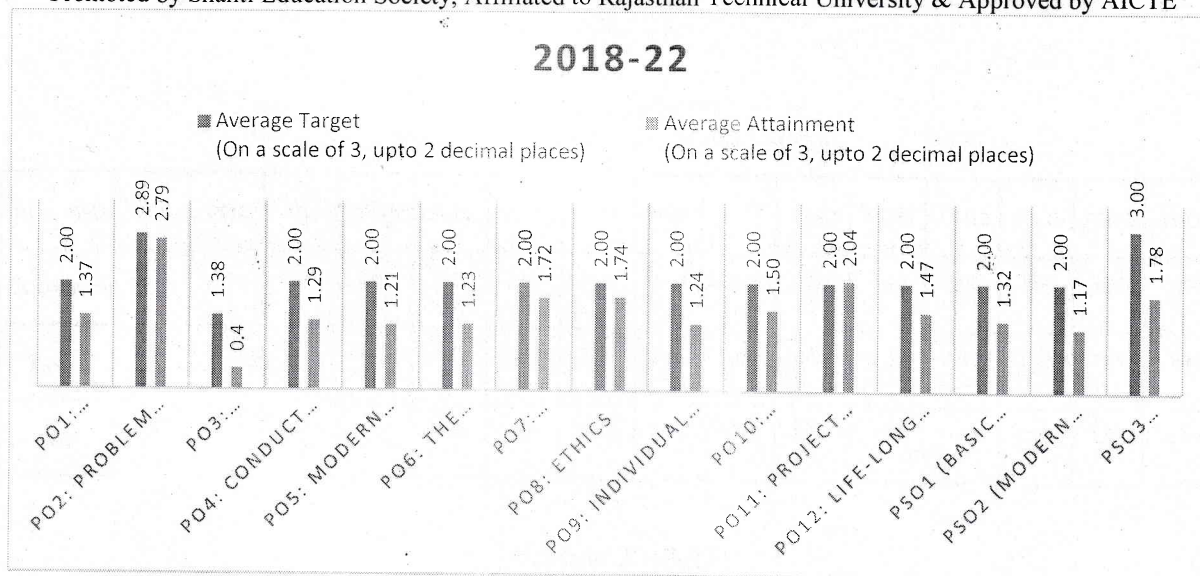
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Figure 1.4: Analysis of PO and PSO Attainment (Batch 2018-22)

1.3 Analysis of PO and PSO Attainment

Session 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	1.00	1.00	1.00	2.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	1.53	1.82	1.76
Target	0.53	0.55	0.33	0.88	0.90	1.20	1.66	0.50	1.23	1.35	1.31	1.12	0.35	0.54	0.62
Gap	0.47	0.45	0.67	1.12	1.10	0.80	1.34	1.50	0.77	0.65	0.69	0.88	1.18	1.28	1.14

Session 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	1.38	2.00	2.00	1.33	1.19	1.74	2.40	2.00	2.00	3.00	3.00	2.00	2.00	2.00	1.76
Target	0.40	1.29	1.21	0.55	0.37	1.10	1.29	1.32	1.17	1.78	1.67	1.54	1.28	1.30	0.62
Gap	0.98	0.71	0.79	0.78	0.82	0.64	1.11	0.68	0.83	1.22	1.33	0.46	0.72	0.70	1.14

Session 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	2.00	2.00	2.00	2.00	2.00	2.00	3.00	2.00	1.33	1.19	2.00	3.00	3.00	2.00
Target	0.40	1.29	1.21	1.23	1.32	1.34	1.50	2.56	2.04	0.55	0.37	1.17	1.78	1.67	1.47
Gap	0.98	0.71	0.79	0.77	0.68	0.66	0.50	0.44	0.04	0.78	0.82	0.83	1.22	1.33	0.53

Session 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	2.00	2.89	1.38	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	3.00
Target	1.37	2.79	0.40	1.29	1.21	1.23	1.72	1.74	1.24	1.50	2.04	1.47	1.32	1.17	1.78
Gap	0.63	0.10	0.98	0.71	0.79	0.77	0.28	0.26	0.76	0.50	0.04	0.53	0.68	0.83	1.22

1.4 Observations

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

PO / PSO	Achieved Level
PO3, PO4, PO5, PO8, PSO1, PSO2 and PSO3	Below Average (<50%)
PO1, PO2, PO6, PO7, PO9, PO10, PO11 and PO12	Average (>=50% but <70%)
-	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 PO-3,4,5,8 and PSO1,2,3 are falling below average (<50%). PO-1, 2, 6, 7, 9, 10, 11, 12 are attained on an average level (>50% but less than 70%).

Table1.6: Achieved Level of PO / PSO (Batch 2020-24)

PO / PSO	Achieved Level
PO1, PO4, PO5 and PSO3	Below Average (<50%)

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PO2, PO3, PO6, PO7, PO8, PO9, PO10, PO11, PSO1 and PSO2	Average (>=50% but <70%)
PO12	Above Average (>=70%)

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 PO1, PO4, PO5 and PSO3 falling below average (<50%). PO2, PO3, PO6, PO7, PO8, PO9, PO10, PO11 and PSO1 and PSO2 are on an average level (>50% but less than 70%). The attainment level of PO12 is above average (>70 %).

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

PO / PSO	Achieved Level
PO1, PO10 and PO11	Below Average (<50%)
PO2, PO3, PO4, PO5, PO6, PO12, PSO1, PSO2, PSO3	Average (>=50% but <70%)
PO7, PO8 and PO9	Above Average (>=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 PO1, PO10 and PO11 are falling below average (<50%). PO2, PO3, PO4, PO5, PO6, PO12, PSO1, PSO2 and PSO3 are attained on average level (>50% but less than 70%). The attainment level of PO7, PO8 and PO9 are above average (>70 %).

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

PO / PSO	Achieved Level
PO3	Below Average (<50%)
PO1, PO4, PO5, PO6, PO9, PSO1, PSO2 and PSO3	Average (>=50% but <70%)
PO2, PO7, PO8, PO10, PO11 and PO12	Above Average (>=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 PO3 is falling below average (<50%). PO1, PO4, PO5, PO6, PO9, PSO1, PSO2 and PSO3 are attained on average level (>50% but less than 70%). The attainment level of PO2, PO7, PO8, PO10, PO11 and PO12 are above average (>70 %).

1.5 Action Taken

- To improve PO1, open book tests were conducted.
- To improve PO3, pedagogical tools like expert lectures, quizzes, workshops and hands-on practice sessions based on complex problem were conducted.
- To improve PO4, new research based project were designed.
- To improve PO5, modern tools like CST, Xilinx and MATLAB were added.
- To improve PO8, social activities were organized.
- To improve PO10, more group discussions and seminar presentations were conducted.
- To improve PO11, hardware projects and workshops were conducted.

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- To improve PSO1, PSO2 and PSO3 new pedagogical tools like expert lectures, Seminars, and quizzes, were conducted, and the question bank and solution of last years were provided.

- To improve PSO3, Conference was held in interdisciplinary emerging areas.

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