MANAKULA VINAYAGAR INSTITUTE OF TECHNOLOGY

Kalitheerthalkuppam, Madagadipet, Puducherry

Department of Electrical and Electronics Engineering

ATTAINMENT OF COURSE OUTCOMES (Batch: 2015-2019) (2014 – 15) Regulation

SL.NO	COs	COURSE NAME	APPEARED	PASSED	%	CO ATTAINED	TARGET LEVEL	TARGET ATTAINMENT
1	C101	Mathematics – I	66	45	68.18	2	2.5	NO
2	C102	Physics	66	61	92.42	3	2.5	YES
3	C103	Chemistry	66	47	72.21	3	2.5	YES
4	C104	Basic Civil & Mechanical	66	63	95.45	3	2.5	YES
5	C105	Engineering Mechanics	66	51	77.27	3	2.5	YES
6	C106	Communicative English	66	65	98.48	3	2.5	YES
7	C107(P)	Physics Lab	66	66	100	3	2.5	YES
8	C108(P)	Chemistry Lab	66	62	93.94	3	2.5	YES
9	C109(P)	Workshop Practice	65	65	100	3	2.5	YES
10	C110	Mathematics – II	62	52	83.87	3	2.5	YES
11	C111	Material Science	62	57	91.94	3	2.5	YES
12	C112	Environmental Science	62	56	90.32	3	2.5	YES
13	C113	Basic Electrical and Electronics Engineering	62	50	80.65	3	2.5	YES
14	C114	Engineering Thermodynamics	62	57	91.94	3	2.5	YES
15	C115	Computer Programming	62	45	72.58	3	2.5	YES
16	C116(P)	Computer Programming Laboratory	61	61	100	3	2.5	YES
17	C117(P)	Engineering Graphics	62	62	100	3	2.5	YES
18	C118(P)	Basic Electrical & Electronics Laboratory	62	62	100	3	2.5	YES
19	C119(P)	NSS / NCC	62	62	100	3	2.5	YES
20	C201	Mathematics – III	60	33	60	1	2.5	NO
21	C202	Electric Circuit Analysis	60	49	81.6	3	2.5	YES
22	C203	Electrical Machines – I	60	47	78.33	3	2.5	YES
23	C204	Electronic Devices and Circuits	60	37	63.33	1	2.5	NO
24	C205	Electromagnetic Theory	60	33	58.33	0	2.5	NO
25	C206	Fluid and Thermal Machines	60	55	91.6	3	2.5	YES
26	C207(P)	Electrical Machines Lab-I	60	60	100	3	2.5	YES
27	C208(P)	Electronics Lab –I	60	60	100	3	2.5	YES
28	C209(P)	Fluid and Thermal Machines Lab	60	60	100	3	2.5	YES
29	C210	Mathematics – IV	59	57	96.61	3	2.5	YES
30	C211	Electrical Machines – II	59	47	83.93	3	2.5	YES
31	C212	Electronic Circuits	59	49	85.96	3	2.5	YES
32	C213	Linear Control Systems	59	33	55.93	0	2.5	NO

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33	C214	Pulse and Digital Circuits	59	43	74.14	3	2.5	YES
34	C215	Object Oriented Programming	59	42	71.19	3	2.5	YES
35	C216(P)	Electrical Machine Lab – II	59	59	100	3	2.5	YES
36	C217(P)	Electronics Lab – II	59	59	100	3	2.5	YES
37	C218(P)	Object Oriented Programming Lab	59	59	100	3	2.5	YES
38	C219(P)	Physical Education	59	59	100	3	2.5	YES
39	C301	Communication Engineering	58	58	100	3	2.5	YES
40	C302	Analog and Digital Integrated Circuits	58	42	72.4	3	2.5	YES
41	C303	Transmission and Distribution	58	53	91.3	3	2.5	YES
42	C304	Power Electronics	58	44	75.8	3	2.5	YES
43	C305	Measurements and Instrumentation	58	52	89.65	3	2.5	YES
44	C306	Energy Engineering	58	54	93.10	3	2.5	YES
45	C307(P)	Electronics Lab – III	58	58	100	3	2.5	YES
46	C308(P)	Measurements and Control Lab	58	58	100	3	2.5	YES
47	C309(P)	General Proficiency – I	58	58	100	3	2.5	YES
48	C310	Power System Analysis	58	53	91.38	3	2.5	YES
49	C311	Utilization of Electrical Energy	58	53	91.37	3	2.5	YES
50	C312	Microprocessors and Microcontrollers	57	52	91.23	3	2.5	YES
51	C313	Electrical Machine Design	58	52	89.66	3	2.5	YES
52	C314	Digital Signal Processing	58	44	75.86	3	2.5	YES
53	C315	Electrical Safety	58	57	98.28	3	2.5	YES
54	C316(P)	Power Electronics Lab	58	58	100	3	2.5	YES
55	C317(P)	Micro Processor and Microcontroller Lab	58	58	100	3	2.5	YES
56	C318(P)	General Proficiency – II	58	58	100	3	2.5	YES
57	C401	Industrial Management	55	55	100	3	2.5	YES
58	C402	Solid State Drives	56	56	100	3	2.5	YES
59	C403	Power system operation and control	56	50	89.2	3	2.5	YES
60	C404	Power system restructuring and Deregulation	56	55	98.2	3	2.5	YES
61	C405	Renewable Energy resources	56	56	100	3	2.5	YES
62	C406(P)	Power system simulation Lab	56	56	100	3	2.5	YES
63	C407(P)	Project Phase – I	56	56	100	3	2.5	YES
64	C408(P)	Seminar	56	56	100	3	2.5	YES
65	C409(P)	Training/Industrial Visit	56	56	100	3	2.5	YES
66	C410	Protection and	56	54	96.4	3	2.5	YES

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		Switchgear						
67	C411	HVDC Transmission	57	55	96.4	3	2.5	YES
68	C412	Smart Grid	57	57	100	3	2.5	YES
69	C413(P)	Project Phase –II	57	57	100	3	2.5	YES
70	C414(P)	Comprehensive Viva	57	57	100	3	2.5	YES
71	C415(P)	Professional Ethical Practice	57	57	100	3	2.5	YES

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ATTAINMENT OF COURSE OUTCOMES (Batch: 2015-2019) (2014 – 15) Regulation

CO	Subject name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
							FIRST SEMESTER						
C101	Mathematics – I	2	2	-	-	-	-	-	-	-	-	-	-
C102	Physics	3	3	3	3	-	3	-	-	-	-	-	3
C103	Chemistry	3	3	3	-	-	3	3	-	-	-	-	3
C104	Basic Civil and Mechanical Engineering	3	3	3	3	-	3	3	-	-	3	-	3
C105	Engineering Mechanics	3	3	-	3	-	3	-	-	-	3	-	3
C106	Communicative English	-	-	-	-	-	-	-	-	3	3	-	3
C107(P)	Physics lab	3	-	-	3	-	3	3	-	3	3	-	3
C108(P)	Chemistry lab	3	-	-	-	-	3	3	-	3	3	-	3
C109(P)	Workshop Practice	-	-	3	-	-	-	-	-	-	-	-	-
							SECOND SEMESTER						
C110	Mathematics – II	3	3	3	-	-	-	-	-	-	-	-	-
C111	Material Science	3	3	3	-	-	3	3	-	-	-	-	3
C112	Environmental Science	3	-	-	-	-	3	3	-	-	-	3	3
C113	Basic Electrical and Electronics Engineering	3	3	-	-	-	3	3	-	3	3	3	3
C114	Engineering Thermodynamics	3	3	3	3	-	-	-	-	-	-	-	3
C115	Computer Programming	3	3	3	3	3	3	3	3	3	3	3	3
C116(P)	Computer Programming Lab	3	3	3	3	3	3	-	-	3	-	3	3
C108(P)	Engineering Graphics	3	3	-	-	-	-	-	-	-	-	-	-
C109(P)	Basic Electrical & Electronics Lab	3	3	-	-	-	3	3	-	3	3	3	3
C110(P)	NSS / NCC *	3	-	-	-	3	3	3	3	3	3	3	3
							THIRD SEMESTER						
C201	Mathematics - III	1	1	1	1	-	-	1	-	-	-	-	1
C202	Electric Circuit Analysis	3	3	-	-	3	-	-	-	-	-	3	-
C203	Electrical Machines – I	3	3	3	-	3	-	-	-	-	-	-	-

C204	Electronic Devices and Circuits	1	1	-	1	1	-	-	-	-	-	-	1
C205	Electromagnetic Theory	0	0	0	-	-	-	-	-	-	-	-	0
C206	Fluid and Thermal Machines	3	-	-	-	-	-	-	-	-	-	-	3
C207(P)	Electrical Machines Lab – I	3	3	3	-	3	-	-	-	-	-	-	-
C208(P)	Electronics Lab – I	3	3	3	3	-	-	-	-	3	-	3	3
C209(P)	Fluid and Thermal Machines Lab	3	-	-	-	-	-	-	-	-	-	-	3
	FOURTH SEMESTER												
C210	Mathematics – IV	3	3	3	3	-	-	3	-	-	-	3	3
C211	Electrical Machines – II	3	3	-	-	-	-	-	-	-	-	-	-
C212	Electronic Circuits	3	3	-	-	3	-	-	-	-	-	3	-
C213	Linear Control System	0	0	-	-		-	-	-	-	-	-	-
C214	Pulse and Digital Circuits	3	3	3	-	3	-	-	-	-	-	-	3
C215	Data structures & object oriented programming	3	3	-	3	3	-	-	-	3	-	-	3
C216(P)	Electrical Machine Lab – II	3	3	3	3	-	-	-	-	3	-	3	3
C217(P)	Electronics Lab – II	3	3	-	-	-	-	-	-		3	-	-
C218(P)	Object Oriented Programming Lab	3	3		-	3	-	3	-	-	3	-	-
C219(P)	Physical Education*	3	3	3	3	3	3	3	3	3	3	3	3
	FIFTH SEMESTER												
C301	Communication Engineering	3	3	3	-	3	-	-	-	-	3	-	3
C302	Analog and Digital Integrated Circuits	3	3	3	3	-	-	-	-	3	3	3	3
C303	Transmission and Distribution	3	3	3	-	3	-	-	-	-	3	-	3
C304	Power Electronics	3	3	-	-	-	-	-	-	-	-	-	3
C305	Measurements and Instrumentation	3	3	-	-	3	-	-	-	-	-	-	-
C306	Energy Engineering	3	3	3	-	3	-	-	-	-	-	-	3
C307(P)	Electronics Lab – III	3	3	-	-	3	-	3	-	-	3	-	-
C308(P)	Measurements and Control Lab	3	3	3	3	3	-	-	-	3	-	3	3
C309(P)	General Proficiency – I	-	-	-	-	-	-	-	-	3	3	-	3
	SIXTH SEMESTER												
C310	Power System Analysis	3	3	-	-	3	-	-	-	-	-	-	-

C311	Utilization of Electrical Energy	3	3	-	-	-	-	-	-	-	-	-	-
C312	Microprocessors and Microcontrollers	3	3	-	-	-	-	-	-	-	-	-	-
C313	Electrical Machine Design	3	3	-	-	-	-	-	-	-	-	-	-
C314	Digital Signal Processing	3	3	-	-	-	-	-	-	-	-	-	-
C315	Electrical Safety	3	-	-	-	-	-	-	-	-	-	-	-
C316(P)	Power Electronics Lab	3	3	3	3	3	-	-	-	3	-	3	3
C317(P)	Micro Processor and Microcontroller Lab	3	3	3	-	3	-	-	-	3	-	-	3
C318(P)	General Proficiency – II	-	-	-	-	-	-	-	-	3	3	-	3
	SEVENTH SEMESTER												
C401	Industrial Management	3	3	-	-	-	-	-	-	-	-	-	-
C402	Solid State Drives	3	3	-	3	-	-	3	-	-	3	-	-
C403	Power system operation and control	3	3	-	-	-	-	-	-	-	-	-	-
C404	Power system restructuring	3	-	-	-	-	3	-	3	-	-	-	3
C405	Renewable Energy resources	3	-	-	-	-	3	-	3	-	-	-	3
C406(P)	Power system simulation Lab	3	-	-	-	-	3	-	3	-	-	-	3
C407(P)	Project Phase – I	3	3	3	3	3	3	3	3	3	3	3	3
C408(P)	Seminar	3	3	3	3	3	3	3	3	3	3	3	3
C409(P)	Training/Industrial Visit	3	3	3	3	3	3	3	3	3	3	3	3
	EIGHT SEMESTER												
C410	Protection and	3	3	-	-	-	-	-	-	-	-	-	-
C411	HVDC Transmission	3	3	-	-	3	-	-	-	-	-	-	3
C412	Smart Grid	3	3	-	-	-	-	-	-	-	-	-	-
C413	Project Phase –II	3	3	3	3	3	3	3	3	3	3	3	3
C414	Comprehensive Viva	3	3	3	3	3	3	3	3	-	3	3	3
C413(P)	Professional Ethical	3	-	-	-	-	-	-	3	3	-	-	3
Average		2.83	2.81	2.83	2.87	2.96	3	2.92	3	3	3	3	2.86

Batch (2015-19)

PO Attainment Target is fixed at 2.5

PO Attainment Level –Direct Assessment

POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Avg of Direct Assessment	2.83	2.81	2.83	2.87	2.96	3	2.92	3	3	3	3	2.86
Weightage of 80% of Direct POs	2.26	2.24	2.29	2.31	2.36	2.4	2.33	2.4	2.4	2.4	2.4	2.28

PO Attainment Level –InDirect Assessment

SURVEYs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Student exit survey	2.3	2.3	2.3	2.1	2.2	2	2.3	2.1	2.3	2.2	2.3	2.3
Alumni survey	2.15	2.15	1.84	2	2	2.07	2	2.15	2.30	2.15	2.15	2.23
Avg of 2 surveys	2.23	2.23	2.07	2.05	2.1	2.03	2.15	2.12	2.3	2.17	2.23	2.26
Weightage of **20%** of in direct POs	0.45	0.45	0.41	0.41	0.42	0.41	0.43	0.42	0.46	0.43	0.44	0.45

B. Overall Levels of Attainment (16)

POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
(DIRECT 80%)	2.26	2.24	2.29	2.31	2.36	2.4	2.33	2.4	2.4	2.4	2.4	2.28
(INDIRECT 20%)	0.45	0.45	0.41	0.41	0.42	0.41	0.43	0.42	0.46	0.43	0.44	0.45
Overall POs Attainment	2.71	2.69	2.7	2.72	2.78	2.81	2.76	2.82	2.86	2.83	2.84	2.73
Target Attainment of POs	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**

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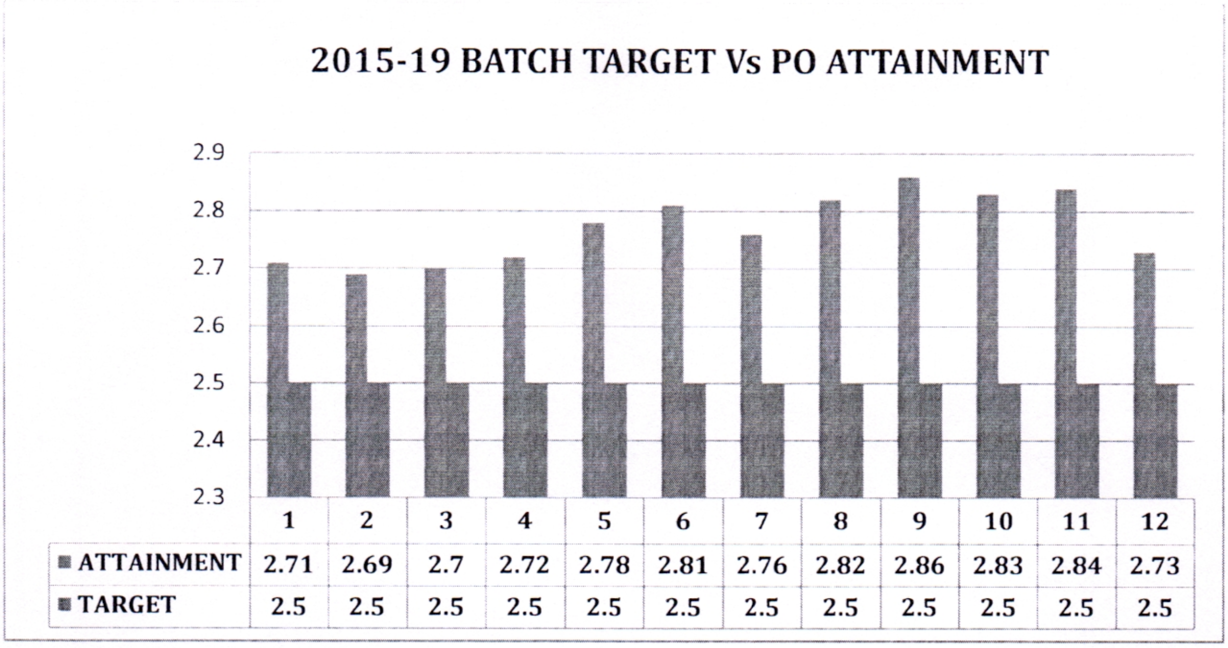

	1	2	3	4	5	6	7	8	9	10	11	12
ATTAINMENT	2.71	2.69	2.7	2.72	2.78	2.81	2.76	2.82	2.86	2.83	2.84	2.73
TARGET	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5

Fig 3.4: Overall POs Attainment for the Batch (2015-2019)

Attainment of PSO – (Batch: 2015-2019)

Course Code	Course Name	PSO1	PSO2
FIRST SEMESTER			
C101	Mathematics – I	2	2
C102	Physics	3	3
C103	Chemistry	3	-
C104	Basic Civil and Mechanical Engineering	-	-
C105	Engineering Mechanics	3	3
C106	Communicative English	3	3
C107(P)	Physics lab	3	-
C108(P)	Chemistry lab	-	3
C109(P)	Workshop Practice	-	-
SECOND SEMESTER			
C110	Mathematics – II	3	3
C111	Material Science	-	3
C112	Environmental Science	3	-
C113	Basic Electrical and Electronics Engineering	3	3
C114	Engineering Thermodynamics	-	-

C115	Computer Programming	3	3
C116(P)	Computer Programming Lab	3	3
C117(P)	Engineering Graphics	3	3
C118(P)	Basic Electrical & Electronics Lab	3	3
C119(P)	NSS / NCC *	-	-
THIRD SEMESTER			
C201	Mathematics - III	1	1
C202	Electric Circuit Analysis	3	3
C203	Electrical Machines – I	3	3
C204	Electronic Devices and Circuits	1	1
C205	Electromagnetic Theory	0	0
C206	Fluid and Thermal Machines	-	-
C207(P)	Electrical Machines Lab – I	3	3
C208(P)	Electronics Lab – I	3	3
C209(P)	Fluid and Thermal Machines Lab	-	-
FOURTH SEMESTER			
C210	Mathematics – IV	3	3
C211	Electrical Machines – II	3	-
C212	Electronic Circuits	3	3
C213	Linear Control System	0	0
C214	Pulse and Digital Circuits	3	3
C215	Data structures & object oriented programming	-	3
C216(P)	Electrical Machine Lab – II	3	3
C217(P)	Electronics Lab – II	-	3
C218(P)	Object Oriented Programming Lab	3	3
C219(P)	Physical Education*	-	-
FIFTH SEMESTER			
C301	Communication Engineering	3	3
C302	Analog and Digital Integrated Circuits	3	3
C303	Transmission and Distribution	3	3
C304	Power Electronics	3	3
C305	Measurements and Instrumentation	3	3

C306	Energy Engineering	3	-
C307(P)	Electronics Lab – III	-	3
C308(P)	Measurements and Control Lab	3	3
C309(P)	General Proficiency – I	-	-
SIXTH SEMESTER			
C311	Power System Analysis	3	3
C312	Utilization of Electrical Energy	3	3
C313	Microprocessors and Microcontrollers	3	3
C314	Electrical Machine Design	-	3
C315	Digital Signal Processing	-	3
C316	Electrical Safety	3	-
C317(P)	Power Electronics Lab	3	3
C318(P)	Micro Processor and Microcontroller Lab	3	3
C319(P)	General Proficiency – II	-	-
SEVENTH SEMESTER			
C401	Industrial Management	-	-
C402	Solid State Drives	3	3
C403	Power system operation and control	-	3
C404	Power system restructuring and Deregulation	-	3
C405	Renewable Energy resources	3	-
C406(P)	Power system simulation Lab	-	3
C407(P)	Project Phase – I	3	3
C408(P)	Seminar	3	3
C409(P)	Training/Industrial Visit	3	3
EIGTH SEMESTER			
C411	Protection and Switchgear	-	3
C412	HVDC Transmission	3	3
C413	Smart Grid	3	-
C414(P)	Project Phase –II	3	3
C415(P)	Comprehensive Viva	3	3
C416(P)	Professional Ethical Practice	3	3
Avg		**2.78**	**2.79**

Department of EEE
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Batch (2015-19)

PSO Attainment Target is fixed at 2.5

PSO Attainment Level –Direct Assesment

PSOs	PSO1	PSO2
Avg of Direct Assessment	2.78	2.79
Weightage of **80%** of Direct PSO	2.22	2.23

PSO Attainment Level –InDirect Assessment

SURVEYs	PSO1	PSO2
Student exit survey	2.3	2.2
Alumni survey	2.07	2.07
Avg of 2 surveys	2.19	2.14
Weightage of **20%** of indirect PSO	0.438	0.428

B. Overall Levels of Attainment (16)

PSOs	PSO1	PSO2
(DIRECT 80%)	2.22	2.23
(INDIRECT 20%)	0.438	0.428
OVERALL PSOs Attainment	2.66	2.66
TARGET Attainment of PSOs	**2.5**	**2.5**

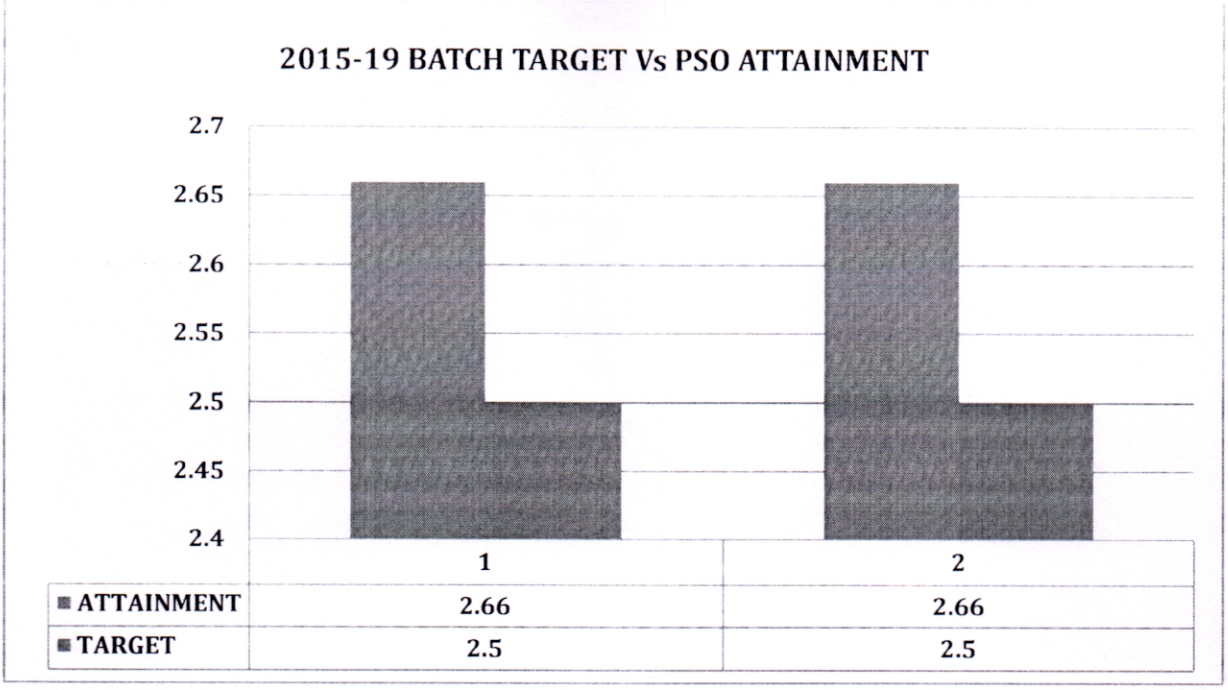

Fig 3.5: Overall PSOs Attainment for the Batch (2015-2019)

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Manakula Vinayagar Institute of Technology
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