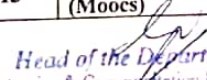


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Table 3.2.2.9: Course Attainment Matrix – Direct and Indirect assessment

Course Code	Course name	CIE (Direct Attainment)					CIE (Indirect Attainment)				
		CO1	CO2	CO3	CO4	CO5	CO1	CO2	CO3	CO4	CO5
14MAT103	Differential Equations & Laplace Transforms	79	76	70	73	71	99	94	94	96	97
14HUM101	Principles of Economics	77	55	67	73	77	98	94	94	96	95
14ECE101	Electrical Machines	55	57	53	54	41	99	93	95	95	97
14ECE102	Network Analysis	59	59	68	66	63	99	94	95	96	97
14ECE103	Electronic Devices	69	58	57	69	62	97	93	95	97	95
14ECE104	Digital Design	63	60	49	63	47	98	94	95	96	96
14ECE201	Electrical and Electronic Devices Practical's	68	68	68	68	68	99	94	95	97	96
14ECE202	Digital Design Practical's	83	83	83	83	83	98	95	96	96	96
14MAT104	Probability & Statistics	77	55	67	73	77	92	84	86	89	89
14HUM102	Principles of Management	91	80	60	56	58	92	86	87	87	88
14ECE105	Signals and Systems (Moocs)	79	79	79	79	79	-	-	-	-	-
14ECE106	Microprocessors and Interfacing	67	67	45	52	47	92	86	86	89	89
14ECE107	Microelectronics and Circuits	88	77	63	65	64	91	85	88	90	89
14ECE108	Control Systems	63	81	77	78	66	91	86	86	88	88
14ECE203	Microprocessors and Interfacing Practicals	81	81	81	81	81	91	87	87	88	90
14ECE204	Simulation and Control Practicals	71	71	71	71	71	92	87	86	87	90
14ECE109	Electromagnetic Theory	58	59	49	67	62	55	52	49	48	47
14ECE110	Communication Systems	85	63	50	45	36	67	64	62	60	59
14ECE111	Analog Electronics	62	64	64	67	68	68	68	66	65	63
14ECE112	Analog and Digital VLSI Design	75	70	65	70	72	68	66	64	63	61
14ECE113	Computer Architecture (Moocs)	96	96	96	96	96	-	-	-	-	-


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Course Code	Course name	CIE (Direct Attainment)					CIE (Indirect Attainment)				
		CO1	CO2	CO3	CO4	CO5	CO1	CO2	CO3	CO4	CO5
14ECE205	Analog Electronics Practical's	83	83	83	83	83	70	66	66	64	63
14ECE206	Communication Systems Practical's	66	66	66	66	66	68	65	62	60	59
14ENG103	Soft Skills	81	78	61	59	62	88	81	79	79	77
14ECE114	Communication Networks	54	63	70	56	63	88	82	80	79	79
14ECE115	Electromagnetic Fields and Microwave Engineering	88	77	63	65	64	88	82	80	79	78
14ECE116	Digital Signal Processing	73	67	60	54	57	88	81	79	77	78
14ECE401	Optical Communication	84	86	68	72	73	88	82	81	79	79
14ECE207	Microwave Practical's	68	68	68	68	68	89	82	81	80	79
14ECE208	Digital Signal Processing Practical's	72	72	72	72	72	87	81	79	77	78
14ECE117	Object Oriented Programming	91	90	67	69	69	90	89	89	88	88
14ECE118	Embedded System Design	89	88	65	68	66	87	92	89	89	90
14ECE119	Mobile Telecommunication & Networks	91	73	77	56	57	87	86	89	88	87
14ECE404	Introduction to MEMS	81	88	60	58	53	84	85	84	82	84
14ECE407	Pattern Recognition and its Applications	90	86	69	65	69	87	86	82	84	84
14ECE408	Digital Communication Techniques	77	74	51	59	65	87	84	87	85	86



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Course Code	Course name	CIE (Direct Attainment)					CIE (Indirect Attainment)				
		CO1	CO2	CO3	CO4	CO5	CO1	CO2	CO3	CO4	CO5
14ECE409	Biomedical Imaging	80	72	59	63	49	89	88	90	92	89
14ECE501	Mini Project	53	53	53	53	53	87	89	88	87	90
14ECE209	Object Oriented Programming Practicals	80	80	80	80	80	90	88	88	88	89
14ECE210	Embedded System Practicals	83	83	83	83	83	87	86	86	86	87
14ECE415	IoT Networks	83	79	69	69	61	91	96	90	91	92
14ECE412	Satellite Communication	77	72	71	64	66	99	96	99	97	97
14ECE601	Technical Seminar	99	99	99	99	99	87	92	91	87	91
14ECE502	Project Work	92	92	92	92	92	92	94	95	93	94


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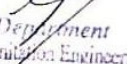
Table 3.2.2.10: Course Attainment Matrix

Course Code	Course name	CIE (Direct Attainment)					CO Attainment Level				
		CO1	CO2	CO3	CO4	CO5	CO1	CO2	CO3	CO4	CO5
14MAT103	Differential Equations & Laplace Transforms	83	80	75	78	76	3	2	2	2	2
14HUM101	Principles of Economics	81	63	72	78	81	3	1	2	2	3
14ECE101	Electrical Machines	64	64	61	62	52	1	1	1	1	0
14ECE102	Network Analysis	67	66	73	72	70	1	1	2	2	1
14ECE103	Electronic Devices	75	65	65	75	69	2	1	1	2	1
14ECE104	Digital Design	70	67	58	70	57	1	1	0	1	0
14ECE201	Electrical and Electronic Devices Practical's	75	74	74	74	74	2	2	2	2	2
14ECE202	Digital Design Practical's	86	85	85	85	85	3	3	3	3	3
14MAT104	Probability & Statistics	80	61	71	76	79	2	1	2	2	2
14HUM102	Principles of Management	91	81	65	62	64	3	3	1	1	1
14ECE105	Signals and Systems (Moocs)	79	79	79	79	79	2	2	2	2	2
14ECE106	Microprocessors and Interfacing	72	71	53	59	55	2	2	0	0	0
14ECE107	Microelectronics and Circuits	89	79	68	70	69	3	2	1	1	1
14ECE108	Control Systems	69	82	79	80	70	1	3	2	2	2
14ECE203	Microprocessors and Interfacing Practicals	83	82	82	82	83	3	3	3	3	3
14ECE204	Simulation and Control Practicals	76	75	74	75	75	2	2	2	2	2
14ECE109	Electromagnetic Theory	57	58	49	63	59	0	0	0	1	0
14ECE110	Communication Systems	81	63	52	48	41	3	1	0	0	0
14ECE111	Analog Electronics	63	65	64	67	67	1	1	1	1	1
14ECE112	Analog and Digital VLSI Design	74	69	65	69	70	2	1	1	1	1
14ECE113	Computer Architecture (Moocs)	96	96	96	96	96	3	3	3	3	5

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Course Code	Course name	CIE (Direct Attainment)					CO Attainment Level				
		CO1	CO2	CO3	CO4	CO5	CO1	CO2	CO3	CO4	CO5
14ECE205	Analog Electronics Practical's	80	80	80	79	79	3	2	2	2	2
14ECE206	Communication Systems Practical's	67	66	65	65	65	1	1	1	1	1
14ENG103	Soft Skills	82	79	65	63	65	3	2	1	1	1
14ECE114	Communication Networks	61	67	72	61	66	1	1	2	1	1
14ECE115	Electromagnetic Fields and Microwave Engineering	88	78	66	68	67	3	2	1	1	1
14ECE116	Digital Signal Processing	76	70	64	59	61	2	1	1	0	1
14ECE401	Optical Communication	85	85	71	73	74	3	3	2	2	2
14ECE207	Microwave Practical's	72	71	71	70	70	2	2	2	2	2
14ECE208	Digital Signal Processing Practical's	75	73	73	73	73	2	2	2	2	2
14ECE117	Object Oriented Programming	91	90	71	73	73	3	3	2	2	2
14ECE118	Embedded System Design	89	89	70	72	71	3	3	1	2	2
14ECE119	Mobile Telecommunication & Networks	90	76	79	62	63	3	2	2	1	1
14ECE404	Introduction to MEMS	82	87	65	63	59	3	3	1	1	0
14ECE407	Pattern Recognition and its Applications	89	86	72	69	72	3	3	2	1	2
14ECE408	Digital Communication Techniques	79	76	58	64	69	2	2	0	1	1
14ECE409	Biomedical Imaging	82	75	65	69	57	3	2	1	1	0
14ECE501	Mini Project	60	61	60	60	61	1	1	1	1	1
14ECE209	Object Oriented Programming Practical's	82	82	82	82	82	3	3	3	3	3


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Course Code	Course name	CIE (Direct Attainment)					CO Attainment Level				
		CO1	CO2	CO3	CO4	CO5	CO1	CO2	CO3	CO4	CO5
14ECE210	Embedded System Practicals	84	83	83	83	84	3	3	3	3	3
14ECE415	IoT Networks	85	82	73	73	67	3	3	2	2	1
14ECE412	Satellite Communication	81	77	77	71	72	3	2	2	2	2
14ECE601	Technical Seminar	97	98	98	97	98	3	3	3	3	3
14ECE502	Project Work	92	92	92	92	92	3	3	3	3	3


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(The attainment levels by direct (student performance) and indirect (surveys) are to be presented through Program level Course-PO&PSO matrices as indicated).

Table 3.3.2.1 reveals PO & PSO Attainment of all courses through Direct Assessment

Table 3.3.2.1:PO & PSO Attainment through Direct Assessment

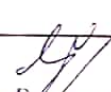
Course code	Course Name	Program Outcome												Program Specific Outcome		
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
II Year Semester I																
14MAT103	Differential Equations & Laplace Transforms	78	79	79	77	80	83	76	-	82	-	79	79	-	-	-
14HUM101	Principles of Economics	75	74	-	-	-	75	75	75	-	-	-	75	75	-	-
14ECE101	Electrical Machines	61	61	61	61	-	61	61	61	-	-	61	61	-	61	-
14ECE102	Network Analysis	69	70	70	70	-	70	70	-	-	-	-	70	69	-	69
14ECE103	Electronic Devices	69	70	70	70	-	-	-	-	-	-	70	70	70	70	70
14ECE104	Digital Design	65	67	65	66	65	-	-	-	-	-	65	64	64	64	64
14ECE201	Electrical and Electronic Devices Practical's	74	74	74	74	74	-	-	-	74	-	74	74	-	74	-
14ECE202	Digital Design	85	85	85	85	85	-	-	-	85	-	-	-	85	85	85

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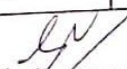
	Practical's															
II Year Semester II																
14MAT104	Probability & Statistics	80	69	75	69	-	-	-	61	-	-	-	73	73	-	70
14HUM102	Principles of Management	73	72	-	-	-	73	73	-	73	73	73	73	73	-	-
14ECE105	Signals and Systems (MOOCS)	79	79	79	79	-	-	-	-	-	-	79	79	-	79	-
14ECE106	Microprocessors and Interfacing	62	63	64	61	62	-	-	-	-	-	-	62	62	61	-
14ECE107	Microelectronics and Circuits	76	75	74	76	-	-	-	-	-	-	75	75	-	75	-
14ECE108	Control Systems	76	76	76	76	-	77	75	76	-	-	-	76	76	-	76
14ECE203	Microprocessors and Interfacing Practical's	82	82	82	82	83	-	-	-	82	-	-	82	82	82	82
14ECE204	Simulation and Control Practical's	75	75	75	75	75	-	-	-	75	-	-	75	75	-	75
III Year Semester I																
14ECE109	Electromagnetic Theory	57	59	56	-	-	-	-	-	-	-	-	57	56	-	57


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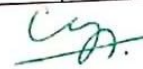
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14ECE110	Communication Systems	58	56	58	56	-	58	59	51	-	-	-	58	59	-	58
14ECE111	Analog Electronics	65	65	65	65	-	-	-	-	-	-	-	65	65	65	65
14ECE112	Analog and Digital VLSI Design	69	70	69	69	-	-	-	-	-	-	-	69	70	69	69
14ECE113	Computer Architecture (MOOCS)	96	96	96	96	-	-	-	-	-	-	-	96	96	96	-
14ECE205	Analog Electronics Practical's	80	80	80	80	-	-	-	-	80	-	-	80	80	80	80
14ECE206	Communication Systems Practical's	66	66	66	66	-	-	-	-	66	-	-	66	66	-	66
III Year Semester II																
14ENG103	Soft Skills	71	71	-	-	-	-	-	71	71	71	-	71	71	-	-
14ECE114	Communication Networks	63	67	65	-	-	-	-	-	-	-	-	65	61	-	70
14ECE115	Electromagnetic Fields and Microwave Engineering	76	71	74	-	74	74	75	-	-	-	-	73	74	-	68
14ECE116	Digital Signal Processing	67	64	61	-	-	-	-	-	-	-	-	65	70	62	69



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Discipline Elective- I 14ECE401	Optical Communication	79	77	77	-	72	-	-	-	-	-	85	78	78	-	78
14ECE207	Microwave Practical's	71	72	71	-	70	-	-	71	71	-	71	-	72	-	70
14ECE208	Digital Signal Processing Practical's	73	73	73	73	73	73	-	-	-	-	-	73	73	-	73
IV Year Semester I																
14ECE117	Object Oriented Programming	33	48	42	39	26	-	-	-	-	-	-	42	47	44	34
14ECE118	Embedded System Design	47	42	46	30	27	-	-	-	23	-	30	32	47	64	40
14ECE119	Mobile Telecommunication & Networks	58	40	37	-	23	-	-	-	-	-	30	25	55	-	48
14ECE404	Introduction to MEMS	57	38	62	75	42	-	-	87	24	-	-	47	52	33	38
14ECE407	Pattern Recognition and its Applications	55	28	46	35	54	-	-	-	-	-	-	24	43	-	-
14ECE408	Digital Communication	61	44	36	-	-	-	-	-	-	-	-	23	41	-	38

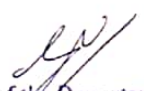

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	Techniques															
14ECE409	Biomedical Imaging	34	41	60	52	57	-	-	-	-	-	-	23	41	-	-
14ECE501	Mini Project	60	60	60	40	40	-	52	60	60	40		40	60	60	60
14ECE209	Object Oriented Programming Practicals	82	55	38	-	55	-	-	-	-	-	27	55	55	38	44
14ECE210	Embedded System Practicals	78	50	44	56	67	-	-	-	56	-	-	-	44	78	-
IV Year Semester II																
14ECE415	IoT Networks	57	52	70	78	-	-	-	82	-	-	-	51	56	-	49
14ECE412	Satellite Communication	54	49	75	74	-	-	-	77	-	-	-	50	56	-	50
14ECE502	Project Work	92	92	92	61	61	-	80	92	92	61	-	61	92	92	92
14ECE601	Technical Seminar	98	98	98	98	65	-		98	98	65	-	65	76	98	82
Direct Attainment		69	66	67	68	60	72	70	74	70	62	63	62	66	70	64
Attainment level		1	1	1	1	1	2	1	2	1	1	1	1	1	1	1


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Tables 3.3.2.2 reveals the PO & PSO attainments through indirect assessments each assessment survey individually weights 100%.

Table 6: PO & PSO Attainment through Indirect Assessment


Survey	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Graduate	80	85	85	85	86	86	86	88	87	87	85	86	86	85	83
Alumni	80	80	84	76	76	81	76	77	79	75	77	76	77	84	80
Employer	83	83	88	92	86	80	84	85	80	80	76	81	78	82	90
Indirect Attainment	81	83	86	84	83	82	82	83	82	81	79	81	80	84	84

Tables 3.3.2.3 reveals the PO & PSO attainments through indirect assessments.

Table 7: PO & PSO Attainment through Indirect Assessment

Survey	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Graduate (60%)	48	51	51	51	52	52	52	53	52	52	51	52	52	51	50
Alumni (20%)	16	16	17	15	15	16	15	15	16	15	15	15	15	17	16
Employer (20%)	17	17	18	18	17	16	17	17	16	16	15	16	16	16	18
Indirect Attainment	81	84	85	85	84	84	84	85	84	83	82	83	83	84	84

The evaluation of PO and PSO attainment by Graduate survey, Alumni survey and Employer survey are graphically represented in Table 5, 6 and 7, respectively.


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Table 3.3.2.9: Overall attainment of Program outcomes (PO) & Program Specific outcomes (PSO)

PO/PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Direct Attainment	69	66	67	68	60	72	70	74	70	62	63	62	66	70	64
Indirect attainment	81	84	85	85	84	84	84	85	84	83	82	83	83	84	84
Overall PO/PSO attainment	71	70	71	71	65	74	73	76	73	66	67	66	69	73	68
Attainment Level	2	1	2	2	1	2	2	2	2	1	1	1	1	2	1

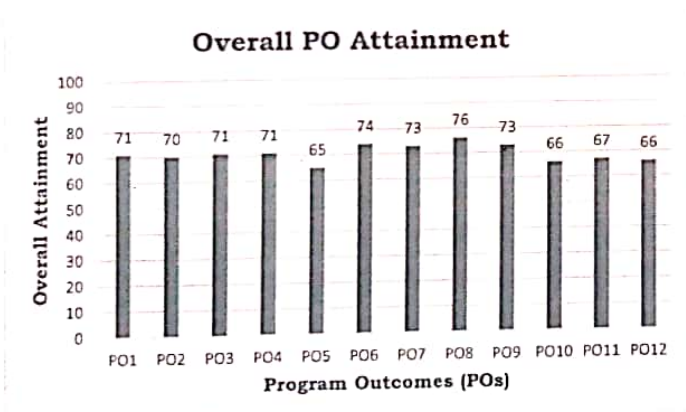


Figure 1: Overall PO Attainment

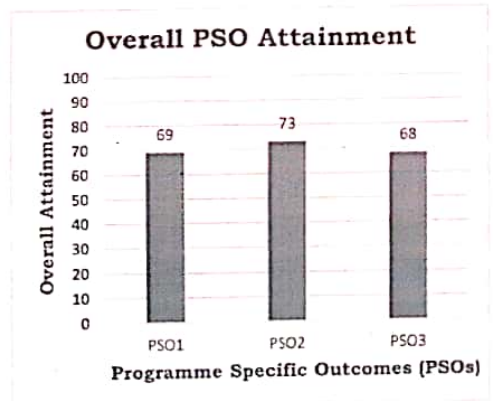


Figure 2: Overall PSO Attainment

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