


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Table 3.2.2.9: Course Attainment Matrix – Direct and Indirect assessment

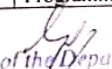
Course Code	Course name	CIE (Direct Attainment)					CIE (Indirect Attainment)				
		CO1	CO2	CO3	CO4	CO5	CO1	CO2	CO3	CO4	CO5
14MAT103	Differential Equations & Laplace Transforms	77	81	69	69	65	80	82	83	85	84
14HUM101	Principles of Economics	77	90	85	75	76	83	83	84	85	84
14ECE101	Electrical Machines	59	43	71	72	40	83	84	85	85	84
14ECE102	Network Analysis	51	65	71	67	69	84	84	85	85	85
14ECE103	Electronic Devices	80	71	62	62	69	84	84	84	84	86
14ECE104	Digital Design	63	67	72	58	75	85	85	84	81	87
14ECE201	Electrical and Electronic Devices Practical's	70	70	70	70	70	85	85	84	84	86
14ECE202	Digital Design Practical's	87	87	87	87	87	83	82	80	66	82
14MAT104	Probability & Statistics	80	61	70	76	73	87	85	85	84	83
14HUM102	Principles of Management	94	89	74	74	74	88	85	85	83	83
14ECE105	Signals and Systems (Moocs)	84	84	84	84	84	-	-	-	-	-
14ECE106	Microprocessors and Interfacing	70	73	65	60	69	87	84	86	83	84
14ECE107	Microelectronics and Circuits	73	56	78	76	59	87	85	85	84	83
14ECE108	Control Systems	72	79	53	57	57	86	82	85	82	83
14ECE203	Microprocessors and Interfacing Practicals	67	67	67	67	67	86	86	85	85	83
14ECE204	Simulation and Control Practicals	80	80	80	80	80	85	84	82	82	81
14ECE109	Electromagnetic Theory	79	63	55	48	55	75	75	74	77	76
14ECE110	Communication Systems(MOCS)	87	87	87	87	87	-	-	-	-	-
14ECE111	Analog Electronics	81	69	67	64	62	84	80	84	81	85
14ECE112	Analog and Digital VLSI Design	81	61	63	68	54	75	77	78	80	81
14ECE113	Computer Architecture	82	66	70	60	59	76	75	74	75	75


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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 Practicals	74	74	74	74	74	80	77	80	79	79
14ECE206	Communication Systems Practicals	66	66	66	66	66	81	77	81	79	81
14ENG103	Soft Skills	81	78	61	59	62	88	81	79	79	77
14ECE114	Communication Networks(MOOCs)	80	80	80	80	80	-	-	-	-	-
14ECE115	Electromagnetic Fields and Microwave Engineering	81	72	73	73	76	70	68	66	66	66
14ECE116	Digital Signal Processing	83	63	48	61	65	75	72	71	76	71
14ECE401	Optical Communication	75	75	52	50	65	83	83	95	74	88
14ECE402	Digital Image Processing	75	78	62	62	54	69	70	68	69	68
14ECE403	Electronic Measurements and Instrumentation	85	72	60	62	46	79	81	80	73	91
14ECE207	Microwave Practicals	80	80	80	80	80	70	70	70	68	68
14ECE208	Digital Signal Processing Practicals	79	79	79	79	79	80	79	78	78	78
14ECE117	Object Oriented Programming	91	86	75	71	72	81	80	81	80	80
14ECE118	Embedded System Design	94	94	70	79	76	81	80	80	80	81
14ECE119	Mobile Telecommunication & Networks	85	82	71	74	77	80	79	80	79	80
14ECE404	Introduction to MEMS	87	94	67	68	65	74	73	73	72	74
14ECE407	Pattern Recognition and its Applications	88	81	62	68	74	60	58	57	58	59
14ECE408	Digital Communication Techniques	91	74	54	50	72	76	75	76	75	75
14ECE409	Biomedical Imaging	88	77	66	65	66	50	48	48	49	48
14ECE209	Object Oriented Programming Practicals	66	66	66	66	66	83	81	81	81	81


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

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Course Code	Course name	CIE (Direct Attainment)					CIE (Indirect Attainment)				
		CO1	CO2	CO3	CO4	CO5	CO1	CO2	CO3	CO4	CO5
14ECE210	Embedded System Practicals	84	84	84	84	84	80	80	80	80	80
14ECE412	Satellite Communication	84	74	62	67	67	79	80	80	79	80
14ECE415	IoT Networks	81	88	72	71	70	82	81	82	82	83
14ECE502	Project Work	93	93	93	93	93	85	83	84	85	85
14ECE601	Technical Seminar	91	91	91	91	91	81	80	80	80	80



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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	78	81	72	72	69	2	3	2	2	1
14HUM101	Principles of Economics	78	89	85	77	78	2	3	3	2	2
14ECE101	Electrical Machines	64	51	74	75	49	1	0	2	2	0
14ECE102	Network Analysis	58	69	74	71	72	0	1	2	2	2
14ECE103	Electronic Devices	81	74	66	66	72	3	2	1	1	2
14ECE104	Digital Design	67	71	74	63	77	1	2	2	1	2
14ECE201	Electrical and Electronic Devices Practical's	73	73	73	73	74	2	2	2	2	2
14ECE202	Digital Design Practical's	87	86	86	83	86	3	3	3	3	3
14MAT104	Probability & Statistics	81	66	73	78	75	3	1	2	2	2
14HUM102	Principles of Management	93	88	76	76	76	3	3	2	2	2
14ECE105	Signals and Systems (Moocs)	84	84	84	84	84	3	3	3	3	3
14ECE106	Microprocessors and Interfacing	73	75	69	65	72	2	2	1	1	2
14ECE107	Microelectronics and Circuits	76	62	79	78	64	2	1	2	2	1
14ECE108	Control Systems	75	80	59	62	62	2	2	0	1	1
14ECE203	Microprocessors and Interfacing Practicals	70	70	70	70	70	2	2	2	2	1
14ECE204	Simulation and Control Practicals	81	81	80	80	80	3	3	3	3	3
14ECE109	Electromagnetic Theory	78	65	59	54	59	2	1	0	0	0
14ECE110	Communication Systems (MOCS)	87	87	87	87	87	3	3	3	3	3
14ECE111	Analog Electronics	82	71	70	67	67	3	2	1	1	1
14ECE112	Analog and Digital VLSI	80	64	66	70	59	2	1	1	1	0

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Course Code	Course name	CIE (Direct Attainment)					CO Attainment Level				
		CO1	CO2	CO3	CO4	CO5	CO1	CO2	CO3	CO4	CO5
	Design										
14ECE113	Computer Architecture	81	68	71	63	62	3	1	2	1	1
14ECE205	Analog Electronics Practicals	75	74	75	75	75	2	2	2	2	2
14ECE206	Communication Systems Practicals	69	68	69	68	69	1	1	1	1	1
14ENG103	Soft Skills	82	79	65	63	65	3	2	1	1	1
14ECE114	Communication Networks (MOOCS)	80	80	80	80	80	2	2	2	2	2
14ECE115	Electromagnetic Fields and Microwave Engineering	79	71	72	72	74	2	2	2	2	2
14ECE116	Digital Signal Processing	81	65	53	64	66	3	1	0	1	1
14ECE401	Optical Communication	77	77	61	55	70	2	2	1	0	1
14ECE402	Digital Image Processing	74	76	63	63	57	2	2	1	1	0
14ECE403	Electronic Measurements and Instrumentation	84	74	64	64	55	3	2	1	1	0
14ECE207	Microwave Practicals	78	78	78	77	77	2	2	2	2	2
14ECE208	Digital Signal Processing Practicals	79	79	79	79	79	2	2	2	2	2
14ECE117	Object Oriented Programming	89	85	76	73	74	3	3	2	2	2
14ECE118	Embedded System Design	91	91	72	79	77	3	3	2	2	2
14ECE119	Mobile Telecommunication & Networks	84	81	73	75	78	3	3	2	2	2
14ECE404	Introduction to MEMS	84	90	68	69	67	3	3	1	1	1
14ECE407	Pattern Recognition and its Applications	82	76	61	66	71	3	2	1	1	2
14ECE408	Digital Communication Techniques	88	74	58	55	73	3	2	0	0	2
14ECE409	Biomedical Imaging	80	71	62	62	62	2	2	1	1	1
14ECE501	Mini Project	81	81	81	81	81	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
14ECE209	Object Oriented Programming Practicals	69	69	69	69	69	1	1	1	1	1
14ECE210	Embedded System Practicals	83	83	83	83	83	3	3	3	3	3
14ECE412	Satellite Communication	83	75	66	69	70	3	2	1	1	1
14ECE415	IoT Networks	81	87	74	73	73	3	3	2	2	2
14ECE502	Project Work	91	91	91	91	91	3	3	3	3	3
14ECE601	Technical Seminar	89	89	89	89	89	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

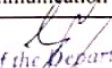
Course code	Course Name	Program Outcome												Program Specific Outcome		
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
II Year Semester I																
14MAT103	Differential Equations & Laplace Transforms	74	75	75	74	78	78	71	-	80	-	73	75	-	-	-
14HUM101	Principles of Economics	82	82	-	-	-	81	81	81	-	-	-	81	81	-	-
14ECE101	Electrical Machines	62	63	64	63	-	63	63	63	-	-	63	63	-	63	-
14ECE102	Network Analysis	69	68	69	69	-	68	68	-	-	-	-	68	68	-	68
14ECE103	Electronic Devices	72	73	73	71	-	-	-	-	-	-	72	72	73	72	72
14ECE104	Digital Design	70	69	70	69	70	-	-	-	-	-	70	70	70	70	70
14ECE201	Electrical and Electronic Devices Practical's	73	73	73	73	73	-	-	-	73	-	73	73	-	73	-
14ECE202	Digital Design	86	86	86	86	86	-	-	-	86	-	-	-	86	86	86

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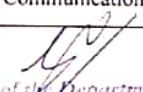
Practical's																
II Year Semester II																
14MAT104	Probability & Statistics	81	72	74	72	-	-	-	66	-	-	-	75	74	-	71
14HUM102	Principles of Management	82	82	-	-	-	82	82	-	82	82	82	82	82	-	-
14ECE105	Signals and Systems (MOOCS)	84	84	84	84	-	-	-	-	-	-	84	84	-	84	-
14ECE106	Microprocessors and Interfacing	71	71	72	71	71	-	-	-	-	-	-	70	70	70	-
14ECE107	Microelectronics and Circuits	71	71	70	71	72	-	-	-	-	-	-	74	74	73	-
14ECE108	Control Systems	68	68	68	68	-	67	69	68	-	-	-	68	68	-	68
14ECE203	Microprocessors and Interfacing Practical's	70	70	70	70	70	-	-	-	70	-	-	70	70	70	70
14ECE204	Simulation and Control Practical's	80	80	80	80	80	-	-	-	81	-	-	81	80	-	80
III Year Semester I																
14ECE109	Electromagnetic Theory	63	54	50	-	-	-	-	-	-	-	-	55	63	-	63
14ECE110	Communication	81	81	70	64	-	64	70	65	-	-	-	75	81	-	87


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Systems(MOOCs)																
14ECE111	Analog Electronics	67	67	61	62	-	-	-	-	-	-	-	62	71	61	61
14ECE112	Analog and Digital VLSI Design	64	63	62	64	-	-	-	-	-	-	-	62	63	63	63
14ECE113	Computer Architecture	65	64	64	50	-	-	-	-	-	-	-	60	55	60	-
14ECE205	Analog Electronics Practicals	65	65	70	55	-	-	-	-	55	-	-	60	75	55	50
14ECE206	Communication Systems Practicals	69	64	64	64	-	-	-	-	64	-	-	64	69	-	69
III Year Semester II																
14ENG103	Soft Skills	71	71	-	-	-	-	-	71	71	71	-	71	71	-	-
14ECE114	Communication Networks	64	69	64	-	-	-	-	-	-	-	-	53	80	-	80
14ECE115	Electromagnetic Fields and Microwave Engineering	64	64	61	-	64	64	64	-	-	-	-	64	63	-	72
14ECE116	Digital Signal Processing	64	64	64	-	-	-	-	-	-	-	-	64	71	60	62
14ECE401	Optical Communication	63	63	64	-	58	-	-	-	-	-	77	53	68	-	55


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14ECE402	Digital Image Processing	67	62	62	52	-	-	53	-	-	-	-	62	67	-	62
14ECE403	Electronic Measurements and Instrumentation	60	58	58	50	-	-	-	-	-	-	-	59	63	-	60
14ECE207	Microwave Practicals	67	65	78	-	77	-	-	62	62		65	-	65	-	77
14ECE208	Digital Signal Processing Practicals	74	68	53	68	63	53	-	-	-	-	-	53	68	-	79
IV Year Semester I																
14ECE117	Object Oriented Programming	53	69	63	65	52	-	-	-	-	-	-	58	53	61	60
14ECE118	Embedded System Design	61	63	69	61	54	-	-	-	48	-	61	55	60	72	59
14ECE119	Mobile Telecommunication & Networks	67	63	53	-	52	-	-	-	-	-	56	52	57	-	52
14ECE404	Introduction to MEMS	61	61	68	80	69	-	-	90	50	-	-	50	55	50	59
14ECE407	Pattern Recognition and its Applications	62	47	61	49	54	-	-	-	-	-	-	47	62	-	-
14ECE408	Digital Communication	70	54	54	-	-	-	-	-	-	-	-	61	55	-	55


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	Techniques																
14ECE409	Biomedical Imaging	67	67	58	50	62	-	-	-	-	-	-	67	57	-	-	
14ECE501	Mini Project	81	81	81	54	54	-	70	81	81	54	-	54	81	81	81	
14ECE209	Object Oriented Programming Practicals	69	46	69		46	-	-	-	-	-	69	46	46	46	60	
14ECE210	Embedded System Practicals	77	61	66	55	66	-	-	-	55	-	-	-	66	77	-	
IV Year Semester II																	
14ECE412	Satellite Communication	83	72	68	72	-	-	-	75	-	-	-	48	58	-	62	
14ECE415	IoT Networks	81	80	74	80	-	-	-	87	-	-	-	52	57	-	68	
14ECE502	Project Work	91	91	91	61	61	-	79	91	91	61	-	61	91	91	91	
14ECE601	Technical Seminar	89	89	89	89	59	-	-	89	89	59	-	59	69	89	74	
Direct Attainment		71	69	68	67	65	69	70	76	71	65	70	64	68	69	68	
Attainment level		2	1	1	1	1	1	1	2	2	1	2	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

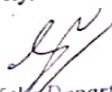
Survey	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Graduate	94	84	87	84	85	86	87	85	84	87	85	85	85	86	88
Alumni	80	82	82	82	82	78	78	78	78	78	78	73	60	76	76
Employer	82	75	81	78	72	79	81	78	83	74	78	78	79	76	86
Indirect Attainment	85	80	83	81	80	81	82	80	82	80	80	79	75	79	83

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%)	56	50	52	50	51	52	52	51	50	52	51	51	51	52	53
Alumni (20%)	16	16	16	16	16	16	16	16	16	16	16	15	12	15	15
Employer (20%)	16	15	16	16	14	16	16	16	17	15	16	16	16	15	17
Indirect Attainment	89	82	85	82	82	83	84	82	83	83	82	81	79	82	85

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	71	69	68	67	65	69	70	76	71	65	70	64	68	69	68
Indirect attainment	89	82	85	82	82	83	84	82	83	83	82	81	79	82	85
Overall PO/PSO attainment	75	72	71	70	68	72	73	77	73	69	72	67	70	72	71
Attainment Level	2	2	2	1	1	2	2	2	2	1	2	1	2	2	2

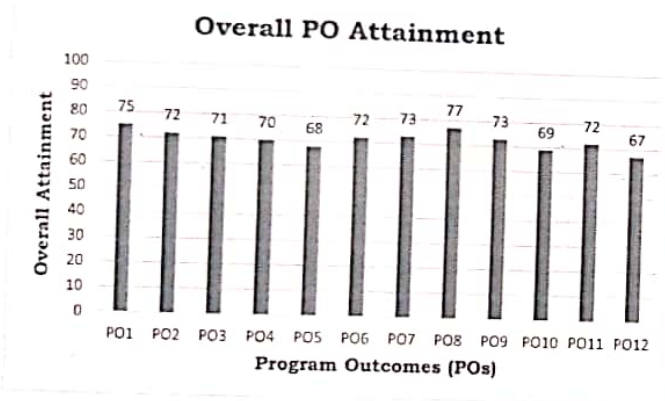


Figure 1: Overall PO Attainment

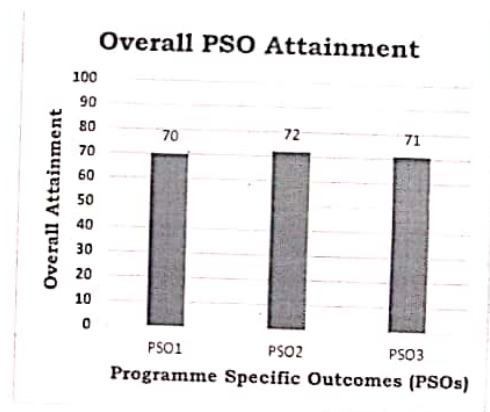
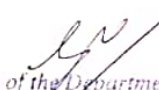


Figure 2: Overall PSO Attainment


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