

Madanapalle Institute of Technology & Science
Department of Electronics & Communication Engineering

Table1: Course Attainment Matrix – Direct and Indirect assessment (2014-18) Batch

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	80	80	85	79	54	93	76	70	78	72
14HUM101	Principles of Economics	92	79	75	84	64	77	78	90	78	74
14ECE101	Electrical Machines	78	76	82	81	73	78	78	84	82	81
14ECE102	Network Analysis	63	83	75	75	50	77	71	91	83	77
14ECE103	Electronic Devices	74	68	57	72	87	80	84	80	84	82
14ECE104	Digital Design	60	71	71	72	84	80	83	72	79	76
14ECE201	Electrical and Electronic Devices Practical's	95	95	95	95	95	86	82	70	76	74
14ECE202	Digital Design Practical's	91	91	91	91	91	84	82	87	73	80
14MAT104	Probability & Statistics (Moocs)	66	66	66	66	66	-	-	-	-	-
14HUM102	Principles of Management	80	78	91	87	68	78	79	84	86	87
14ECE105	Signals and Systems	64	64	77	63	51	79	80	84	78	86
14ECE106	Microprocessors and Interfacing	88	87	66	88	71	80	76	90	83	86
14ECE107	Microelectronics and Circuits	74	60	66	75	76	90	84	90	87	75
14ECE108	Control Systems	47	63	64	62	60	75	75	91	90	75
14ECE203	Microprocessors and Interfacing Practicals	92	92	92	92	92	80	86	81	87	81
14ECE204	Simulation and Control Practicals	86	86	86	86	86	88	76	90	81	81
14ECE109	Electromagnetic Theory (Moocs)	62	62	62	62	62	-	-	-	-	-
14ECE110	Communication System	88	83	67	87	73	83	95	85	78	73
14ECE111	Analog Electronics	94	85	85	80	88	85	93	79	88	81
14ECE112	Analog and Digital VLSI Design	83	75	75	84	80	73	81	86	79	85

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14ECE113	Computer Architecture	82	66	84	76	63	85	75	86	85	86
14ECE205	Analog Electronics Practical's	94	94	94	94	94	74	85	86	87	84
14ECE206	Communication Systems Practical's	93	93	93	93	93	73	75	84	68	79
14ENG103	Soft Skills	74	76	87	72	73	83	83	90	86	96
14ECE114	Communication Networks	98	63	96	89	87	77	83	96	76	95
14ECE115	Electromagnetic Fields and Microwave Engineering	96	65	89	87	88	93	80	91	85	84
14ECE116	Digital Signal Processing	73	77	95	88	87	83	89	87	85	84
14ECE402	Digital Image Processing (Moocs)	77	77	77	77	77	-	-	-	-	-
14ECE207	Microwave Practical's	77	77	77	77	77	87	96	83	87	81
14ECE208	Digital Signal Processing Practical's	76	76	76	76	76	83	96	83	83	90
14CSU103	Object Oriented Programming	88	93	93	90	70	89	81	66	77	76
14ECE117	Embedded System Design	98	70	95	90	89	73	70	83	87	89
14ECE118	Mobile Telecommunication & Networks	93	70	85	89	80	81	84	80	74	76
14ECE405	ROBOTICS (Moocs)	100	100	100	100	100	-	-	-	-	-
14ECE404	Introduction to MEMS	89	77	74	83	68	81	76	87	78	89
14ECE410	Operating Systems	100	91	82	94	89	87	86	82	81	77
14ECE411	Machine vision	91	92	85	96	83	74	78	76	84	80
14ECE209	Object Oriented Programming Practicals	92	92	92	92	92	77	76	86	82	75
14ECE210	Embedded System Practicals	82	82	82	82	82	77	79	76	78	80
14ECE501	Mini Project	93	93	93	93	93	81	86	81	74	80
14ECE412	Satellite Communication	80	65	70	74	77	83	81	83	72	70
14ECE414	Software for Embedded Systems	92	68	83	80	87	87	85	81	75	81
14ECE415	IoT Networks	68	75	78	83	84	83	82	86	76	79
14ECE502	Project Work	87	87	87	87	87	81	70	72	89	81
14ECE601	Technical Seminar	98	98	98	98	98	83	86	79	79	74

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Table 2: 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	80	80	85	79	54	3	3	3	2	0
14HUM101	Principles of Economics	92	79	75	84	64	3	2	2	3	1
14ECE101	Electrical Machines	78	76	82	81	74	2	2	3	3	2
14ECE102	Network Analysis	63	83	75	75	50	1	3	2	2	0
14ECE103	Electronic Devices	74	68	57	72	87	2	1	0	2	3
14ECE104	Digital Design	60	71	71	72	84	1	2	2	2	3
14ECE201	Electrical and Electronic Devices Practical's	95	95	95	95	95	3	3	3	3	3
14ECE202	Digital Design Practical's	95	95	95	95	95	3	3	3	3	3
14MAT104	Probability & Statistics (Moocs)	66	66	66	66	66	1	1	1	1	1
14HUM102	Principles of Management	80	78	91	87	68	3	2	3	3	1
14ECE105	Signals and Systems	64	64	77	63	51	1	1	2	1	0
14ECE106	Microprocessors and Interfacing	88	87	66	88	71	3	3	1	3	2
14ECE107	Microelectronics and Circuits	74	60	66	75	76	2	1	1	2	2
14ECE108	Control Systems	47	63	64	62	60	0	1	1	1	1
14ECE203	Microprocessors and Interfacing Practical's	92	92	92	92	92	3	3	3	3	3
14ECE204	Simulation and Control Practical's	86	86	86	86	86	3	3	3	3	3
14ECE109	Electromagnetic Theory (Moocs)	62	62	62	62	62	1	1	1	1	1
14ECE110	Communication System	88	83	67	87	73	3	3	1	3	2
14ECE111	Analog Electronics	94	85	85	80	88	3	3	3	3	3
14ECE112	Analog and Digital VLSI Design	83	75	75	84	80	3	2	2	3	3
14ECE113	Computer Architecture	82	66	84	76	63	3	1	3	2	1
14ECE205	Analog Electronics Practical's	94	94	94	94	94	3	3	3	3	3
14ECE206	Communication Systems	93	93	93	93	93	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			
	Practical's													
14ENG103	Soft Skills	74	76	87	72	73	2	2	3	2				2
14ECE114	Communication Networks	98	63	96	89	87	3	1	3	3				3
14ECE115	Electromagnetic Fields and Microwave Engineering	96	65	89	87	88	3	1	3	3				3
14ECE116	Digital Signal Processing	73	77	95	88	87	2	2	3	3				3
14ECE402	Digital Image Processing (Moocs)	77	77	77	77	77	2	2	2	2				2
14ECE207	Microwave Practical's	77	77	77	77	77	2	2	2	2				2
14ECE208	Digital Signal Processing Practical's	76	76	76	76	76	2	2	2	2				2
14CSU103	Object Oriented Programming	88	93	93	90	70	3	3	3	3				1
14ECE117	Embedded System Design	98	70	95	90	89	3	2	3	3				3
14ECE118	Mobile Telecommunication & Networks	93	70	85	89	80	3	2	3	3				2
14ECE405	ROBOTICS (Moocs)	100	100	100	100	100	3	3	3	3				3
14ECE404	Introduction to MEMS	89	77	74	83	68	3	2	3	2				1
14ECE410	Operating Systems	100	91	82	94	89	3	3	3	3				3
14ECE411	Machine vision	91	92	85	96	83	3	3	3	3				3
14ECE209	Object Oriented Programming Practical's	92	92	92	92	92	3	3	3	3				3
14ECE210	Embedded System Practical's	82	82	82	82	82	3	3	3	3				3
14ECE501	Mini Project	93	93	93	93	93	3	3	3	3				3
14ECE412	Satellite Communication	80	65	70	74	77	3	1	2	2				2
14ECE414	Software for Embedded Systems	92	68	83	80	87	3	1	3	3				3
14ECE415	IoT Networks	68	75	78	83	84	1	2	2	3				3
14ECE502	Project Work	87	87	87	87	87	3	3	3	3				3
14ECE601	Technical Seminar	98	98	98	98	98	3	3	3	3				3

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Results of evaluation of each PO & PSO (2014-18) Batch

(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: PO & PSO Attainment of all courses 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	76	77	76	75	80	83	73	-	81	-	72	76	-	-	-
14HUM101	Principles of Economics	79	79	-	-	-	79	79	79	-	-	-	79	79	79	-
14ECE101	Electrical Machines	78	78	79	78	-	78	78	78	-	-	78	78	78	78	-
14ECE102	Network Analysis	71	72	73	72	-	72	72	-	-	-	-	72	71	-	70
14ECE103	Electronic Devices	74	74	73	73	-	-	-	-	-	-	74	74	75	74	74
14ECE104	Digital Design	73	71	73	72	72	-	-	-	-	-	72	73	72	73	73
14ECE201	Electrical and Electronic Devices Practical's	91	91	91	91	91	-	-	-	91	-	91	91	-	91	-
14ECE202	Digital Design Practical's	92	91	91	91	91	-	-	-	91	-	-	-	91	91	90
II Year Semester II																

Table 3: PO & PSO Attainment through Direct Assessment

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14MAT104	Probability & Statistics (Moocs)	48	46	47	46	-	-	-	-	47	-	-	47	47	-	47
14HUM102	Principles of Management	81	82	-	-	-	81	81	-	81	81	-	81	81	-	-
14ECE105	Signals and Systems	70	70	70	70	70	70	70	70	70	-	-	70	70	-	70
14ECE106	Microprocessors and Interfacing	80	81	81	79	80	-	-	-	-	-	-	81	81	80	-
14ECE107	Microelectronics and Circuits	73	74	73	73	-	-	-	-	73	73	-	73	-	74	-
14ECE108	Control Systems	64	64	64	64	-	65	62	64	-	-	-	64	64	-	64
14ECE203	Microprocessors and Interfacing Practical's	90	90	90	90	90	-	-	-	90	-	-	90	90	90	90
14ECE204	Simulation and Control Practical's	90	90	90	90	90	-	-	-	90	-	-	90	90	-	90

III Year Semester I

14ECE109 MOOCS	Electromagnetic Theory	66	66	67	-	-	-	-	-	-	-	-	66	67	-	66
14ECE110	Communication Systems	80	80	81	79	-	81	80	80	-	-	-	80	81	-	80
14ECE111	Analog Electronics	86	86	86	86	-	-	-	-	-	-	-	86	86	86	86
14ECE112	Analog and Digital VLSI Design	79	80	80	80	-	-	-	-	-	-	-	80	80	80	80

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14ECE113	Computer Architecture	76	76	77	75	-	-	-	-	-	-	-	-	-	76	76	76	-
14ECE205	Analog Electronics Practical's	92	92	92	92	-	-	-	-	-	-	-	-	-	92	92	92	92
14ECE206	Communication Systems Practical's	90	90	90	90	-	-	-	-	-	-	-	-	90	90	90	-	90

III Year Semester II

14ENG103	Soft Skills	-	-	-	-	-	-	-	-	80	80	80	80	80	70				80
14ECE114	Communication Networks	88	85	84	-	-	-	-	-	-	-	-	-	-	86	91			82
14ECE115	Electromagnetic Fields and Microwave Engineering	86	86	81	-	85	85	85	-	-	-	-	-	-	85	91			87
14ECE116	Digital Signal Processing	78	78	78	78	-	-	78	-	-	-	-	-	-	78	78			78
Discipline Elective- IMOOCs- 14ECE402	Digital Image Processing	79	79	79	-	78	-	-	79	79	-	-	79	-	-	79			79
14ECE207	Microwave Practical's	78	78	78	78	78	78	-	-	-	-	-	-	-	78	78			78
14ECE208	Digital Signal Processing Practical's	78	78	78	78	-	-	-	78	-	-	-	-	-	78	78			78

IV Year Semester I

14CSU103	Object Oriented Programming	86	87	84	86	83	-	-	-	-	-	-	-	-	-	-	-	86	85	86	80
14ECE117	Embedded System Design	89	81	86	70	82	-	-	-	-	93	-	-	82	88	87	86	90			
14ECE118	Mobile Telecommunication & Networks	79	83	83	-	75	-	-	-	-	-	-	91	81	81	-	76				
Discipline Elective - II MOOCS14ECE405	ROBOTICS	96	96	96	-	96	-	-	-	-	-	-	96	97	96	-	96				
Discipline Elective - III 14ECE404	Introduction to MEMS	80	79	75	80	82	-	-	-	77	79	-	-	79	79	80	78				
Discipline Elective - III 14ECE410	Operating Systems	89	89	89	89	89	-	-	-	-	-	-	-	89	89	89	--				
Discipline Elective - III 14ECE411	Machine vision	87	87	87	87	87	-	-	-	-	-	-	-	87	87	87	-				
14ECE209	Object Oriented Programming Practicals	89	89	89	-	89	-	-	-	-	-	-	89	89	89	89	89				
14ECE210	Embedded System Practicals	81	81	81	81	81	-	-	-	-	81	-	-	-	-	81	81	-			
14ECE501	Mini Project	93	93	93	93	93	-	93	93	93	93	93	-	93	93	93	93				
IV Year Semester II																					
Discipline Elective - IV 14ECE412	Satellite Communication	81	71	75	71	-	-	-	-	68	-	-	-	-	-	-	-	74	74	-	72
Discipline Elective	Software for	82	82	82	83	-	-	-	-	-	-	-	-	-	-	-	-	82	82	81	-

Tables: 4 reveals the PO & PSO attainments through indirect assessments each assessment survey individually weights 100%.

Table 4: PO & PSO Attainment through Indirect Assessment

Survey	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Graduate	93	93	93	93	95	89	89	92	92	92	92	92	91	91	91
Alumni	91	96	96	96	96	89	89	89	89	89	89	87	89	90	90
Employer	87	87	87	87	78	73	73	73	93	75	87	83	87	87	87
Indirect Attainment	90	92	92	92	90	84	84	85	91	85	89	87	89	89	89

Tables: 5 reveals the PO & PSO attainments through indirect assessments.

Table 5: 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	56	56	56	57	53	53	55	55	55	55	55	55	55	55
Alumni (20%)	18	19	19	19	19	18	18	18	18	18	18	17	18	18	18
Employer (20%)	17	17	17	17	16	15	15	15	19	15	17	17	17	17	17
Indirect Attainment	91	92	92	92	92	86	86	88	92	88	90	89	90	90	90

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Table 6: 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	81	81	81	80	85	77	78	77	87	87	81	81	82	84	81
Indirect attainment	91	92	92	92	92	86	86	88	92	88	90	89	90	90	90
Overall PO/PSO attainment	83	83	83	82	86	79	80	79	88	87	83	83	84	85	83
Attainment Level	3	3	3	3	3	2	3	2	3	3	3	3	3	3	3

Overall PO Attainment

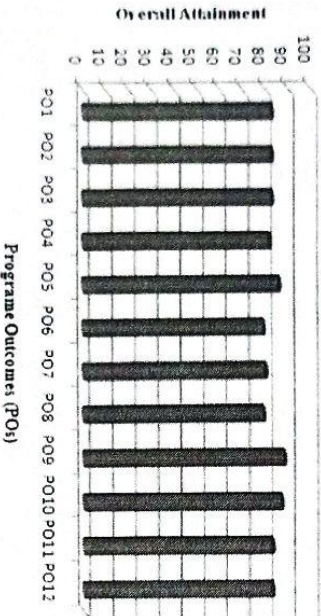


Figure 1: Overall PO Attainment

Overall PSO Attainment

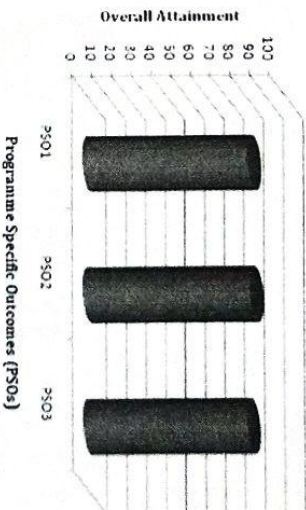


Figure 2: Overall PSO Attainment

Conclusion: The overall attainment of POs and PSOs as illustrated in Table 6 and Figure 1 and 2, it is inferred that most of the POs and PSOs have attained the maximum attainment level of 3. Based on this observation, the target levels of COs for the succeeding batches may be increased.

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