3.2.2. Record the attainment of Course Outcomes of all courses with respect to set attainment levels (65)

CO ATTAINMENT FOR THE STUDENTS OF 2014-18 BATCH

Course Code	Name of the subject	COs	Direct Value	Indirect Value	Total
U14ENG101	Technical English – I	CO1	99.15	84.62	94.79
		CO2	99.15	83.76	94.53
		CO3	99.15	84.33	94.70
		CO4	100.00	84.90	95.47
		CO5	100.00	86.04	95.81
U14MAT102	Multivariable Calculus and Matrices *	CO1	88.03	78.92	85.30
		CO2	88.03	80.91	85.90
		CO3	88.89	83.48	87.26
		CO4	79.49	82.62	80.43
		CO5	79.49	81.48	80.09
U14PHY103	Engineering Physics *	CO1	85.47	85.75	85.56
		CO2	88.89	86.61	88.21
		CO3	94.87	85.47	92.05
		CO4	92.31	85.75	90.34
		CO5	92.31	85.47	90.26
U14CHE104	Engineering Chemistry *	CO1	82.91	85.19	83.59
		CO2	90.60	83.19	88.38
		CO3	94.02	84.62	91.20
		CO4	90.60	85.75	89.15
		CO5	90.60	84.90	88.89
U14FOC105	Fundamentals of Computing Systems *	CO1	74.36	78.92	75.73
		CO2	76.92	85.19	79.40
		CO3	76.92	81.48	78.29
		CO4	87.18	84.33	86.32
		CO5	87.18	85.47	86.67
U14BEE106	Basic Electrical & Electronics Engineering	CO1	85.47	88.89	86.50
		CO2	92.31	88.32	91.11
		CO3	93.16	87.75	91.54
		CO4	93.16	88.60	91.79
		CO5	93.16	88.32	91.71
U14PCL107	Physics & Chemistry Laboratory-1	CO1	85.47	94.59	88.21
		CO2	92.31	94.02	92.82
		CO3	95.73	96.58	95.98
U14CPL108	Computer Practices Laboratory *	CO1	79.49	95.44	84.27
		CO2	93.16	94.87	93.68

		CO3	93.16	95.16	93.76
U14EPL109	Engineering Practices Laboratory *	CO1	98.29	96.58	97.78
		CO2	99.15	95.73	98.12
		CO3	100.00	96.01	98.80
U14ENG201	Technical english – ii	CO1	92.31	77.78	87.95
		CO2	96.58	84.90	93.08
		CO3	100.00	79.49	93.85
		CO4	100.00	74.36	92.31
		CO5	100.00	79.49	93.85
U14MAT202	Vector calculus, differential equations and complex analysis	CO1	84.62	78.35	82.74
		CO2	84.62	88.32	85.73
		CO3	82.05	78.35	80.94
		CO4	86.32	76.92	83.50
		CO5	86.32	83.19	85.38
U14PHY203	Material science	CO1	98.29	88.60	95.38
		CO2	94.87	84.62	91.79
		CO3	88.89	79.77	86.15
		CO4	96.58	85.47	93.25
		CO5	96.58	78.63	91.20
U14CHE205A	Chemistry for electrical and electronics engineers	CO1	87.18	79.49	84.87
		CO2	79.49	83.19	80.60
		CO3	70.94	82.62	74.44
		CO4	69.23	81.48	72.91
		CO5	69.23	81.48	72.91
U14CPR206	Programming in c	CO1	75.21	94.02	80.85
		CO2	68.38	90.03	74.87
		CO3	59.83	87.46	68.12
		CO4	64.10	92.02	72.48
		CO5	64.10	89.74	71.79
U14EGR207	Engineering graphics	CO1	86.32	81.20	84.79
		CO2	87.18	84.05	86.24
		CO3	84.62	86.32	85.13
		CO4	90.60	87.18	89.57
		CO5	90.60	83.19	88.38
U14PCL208	Physics and chemistry laboratory - ii	CO1	100.00	86.61	95.98
		CO2	100.00	91.17	97.35
		CO3	88.89	87.75	88.55
U14CPL209	C programming laboratory	CO1	100.00	91.45	97.44
		CO2	98.29	90.03	95.81
		CO3	77.78	90.03	81.45
U14BEEL210	Basic Electrical And Electronics Engineering Laboratory	CO1	100.00	90.31	97.09
		CO2	100.00	91.17	97.35
		CO3	76.92	91.45	81.28

U14GE301A	Transforms and partial differential equations	CO1	76.60	80.75	77.84
		CO2	80.85	82.16	81.24
		CO3	82.98	82.16	82.73
		CO4	85.82	80.52	84.23
		CO5	85.82	80.52	84.23
U14EC302	Electronics Devices	CO1	90.07	82.63	87.84
		CO2	88.65	82.63	86.85
		CO3	91.49	79.81	87.99
		CO4	97.87	81.69	93.02
		CO5	97.87	80.28	92.60
U14EC303	Digital System Design	CO1	95.04	81.92	91.10
		CO2	92.20	83.10	89.47
		CO3	87.23	82.63	85.85
		CO4	93.62	84.98	91.02
		CO5	93.62	81.92	90.11
U14EC304	Signals And Systems	CO1	85.82	81.92	84.65
		CO2	85.11	77.23	82.74
		CO3	88.65	74.65	84.45
		CO4	95.04	75.35	89.13
		CO5	95.04	70.19	87.58
U14EE310	Electrical Engineering	CO1	93.62	79.81	89.48
		CO2	92.91	78.17	88.49
		CO3	90.78	81.69	88.05
		CO4	95.74	81.69	91.53
		CO5	95.74	71.83	88.57
U14CHE304	Environmental Science	CO1	98.58	79.58	92.88
		CO2	98.58	82.63	93.80
		CO3	99.29	81.69	94.01
		CO4	97.87	79.81	92.45
		CO5	97.87	81.22	92.88
U14GE302	PACE	CO1	93.62	82.86	90.39
		CO2	90.78	83.33	88.55
		CO3	86.52	83.10	85.50
		CO4	94.33	80.75	90.25
		CO5	94.33	81.69	90.54
U14GE303	Communication Skill Lab	CO1	100.00	81.92	94.58
		CO2	100.00	83.10	94.93
		CO3	100.00	83.80	95.14
U14EC306	Digital Lab	CO1	99.29	81.22	93.87
		CO2	99.29	83.33	94.50
		CO3	99.29	83.33	94.50
U14EC305	Electronics lab	CO1	97.87	81.22	92.88
		CO2	100.00	83.10	94.93

		CO3	100.00	83.10	94.93
U14MAT401C	Probability and random process	CO1	73.76	81.09	75.96
		CO2	69.50	82.51	73.40
		CO3	70.21	82.51	73.90
		CO4	78.72	80.85	79.36
		CO5	78.72	80.85	79.36
U14EC401	Electromagnetic fields	CO1	78.72	79.67	79.01
		CO2	82.27	83.22	82.55
		CO3	92.20	82.03	89.15
		CO4	97.16	79.91	91.99
		CO5	97.16	81.32	92.41
U14EC402	Electronic circuits	CO1	83.69	82.51	83.33
		CO2	91.49	81.56	88.51
		CO3	96.45	79.91	91.49
		CO4	97.87	81.80	93.05
		CO5	97.87	79.43	92.34
U14EC403	Linear integrated circuits	CO1	93.62	82.27	90.21
		CO2	94.33	83.45	91.06
		CO3	92.91	82.98	89.93
		CO4	95.74	85.34	92.62
		CO5	95.74	82.27	91.70
U14EE407	Control systems	CO1	79.43	82.51	80.35
		CO2	79.43	77.54	78.87
		CO3	80.14	75.18	78.65
		CO4	90.78	75.89	86.31
		CO5	90.78	70.45	84.68
U14EC404	Measurements and instrumentation	CO1	95.04	80.14	90.57
		CO2	95.04	78.49	90.07
		CO3	92.20	82.03	89.15
		CO4	93.62	82.03	90.14
		CO5	93.62	72.10	87.16
U14GE402	Personality and career enhancement	CO1	94.33	79.91	90.00
		CO2	92.91	82.98	89.93
		CO3	91.49	82.03	88.65
		CO4	97.16	80.14	92.06
		CO5	97.16	81.56	92.48
U14EC406	Electronic circuit and simulation Laboratory	CO1	100.00	81.56	94.47
		CO2	100.00	83.45	95.04
		CO3	100.00	83.45	95.04
U14EC405	Linear integrated circuits Laboratory	CO1	100.00	81.56	94.47
		CO2	100.00	83.69	95.11
		CO3	100.00	83.69	95.11
U14MAT501B	Numerical methods	CO1	78.01	81.09	78.94

		CO2	81.56	81.09	81.42
		CO3	80.14	82.51	80.85
		CO4	79.43	82.51	80.35
		CO5	79.43	83.69	80.71
U14EC501	Analog communication systems	CO1	65.25	81.09	70.00
		CO2	73.05	80.61	75.32
		CO3	78.01	81.80	79.15
		CO4	68.09	81.56	72.13
		CO5	68.09	82.74	72.48
U14EC502	Digital signal processing	CO1	75.18	83.45	77.66
		CO2	66.67	81.09	70.99
		CO3	61.70	82.03	67.80
		CO4	82.98	82.74	82.91
		CO5	82.98	82.98	82.98
U14EC503	Transmission lines and waveguides	CO1	47.52	82.27	57.94
		CO2	53.90	82.98	62.62
		CO3	54.61	82.27	62.91
		CO4	62.41	84.40	69.01
		CO5	62.41	82.74	68.51
U14EC504	Microprocessor and its application	CO1	82.98	83.45	83.12
		CO2	82.27	82.98	82.48
		CO3	79.43	82.51	80.35
		CO4	91.49	82.98	88.94
		CO5	91.49	82.74	88.87
U14EC505	Computer networks	CO1	63.12	85.34	69.79
		CO2	61.70	83.45	68.23
		CO3	65.25	85.34	71.28
		CO4	75.18	82.98	77.52
		CO5	75.18	83.45	77.66
U15EC501	Personality and Carrier Enhancement	CO1	44.68	84.40	56.60
		CO2	65.25	83.45	70.71
		CO3	85.11	83.92	84.75
		CO4	61.70	83.92	68.37
		CO5	61.70	84.87	68.65
U14EC508	Computer networks Lab	CO1	94.33	85.82	91.77
		CO2	97.16	84.63	93.40
		CO3	100.00	85.82	95.74
U14EC507	Digital signal processing Lab	CO1	100.00	85.58	95.67
		CO2	100.00	84.16	95.25
		CO3	99.29	86.29	95.39
U14EC506	Microprocessor lab	CO1	98.58	85.11	94.54
		CO2	98.58	85.82	94.75
		CO3	98.58	84.63	94.40

U14EC601	Digital Image Processing	CO1	78.72	82.74	79.93
		CO2	74.47	82.74	76.95
		CO3	68.79	83.69	73.26
		CO4	92.20	84.87	90.00
		CO5	92.20	83.45	89.57
U14EC602	Digital communication	CO1	59.57	85.11	67.23
		CO2	66.67	85.58	72.34
		CO3	74.47	85.58	77.80
		CO4	75.89	82.98	78.01
		CO5	75.89	86.05	78.94
U14EC603	Antenna and wave propagation	CO1	69.50	86.05	74.47
		CO2	72.34	83.45	75.67
		CO3	74.47	84.16	77.38
		CO4	78.72	82.74	79.93
		CO5	78.72	83.45	80.14
U14EC604	VLSI design	CO1	78.01	86.05	80.43
		CO2	67.38	83.69	72.27
		CO3	61.70	85.58	68.87
		CO4	78.72	83.69	80.21
		CO5	78.72	86.05	80.92
U14EC605	Micro controller and RISC architecture	CO1	58.87	85.34	66.81
		CO2	59.57	86.29	67.59
		CO3	68.79	83.22	73.12
		CO4	85.11	85.82	85.32
		CO5	85.11	85.11	85.11
U14EC606	Medical instrumentation	CO1	67.38	86.29	73.05
		CO2	66.67	84.63	72.06
		CO3	71.63	84.63	75.53
		CO4	88.65	83.69	87.16
		CO5	88.65	85.58	87.73
U14GE601	Personality and Career enhancement - iv	CO1	88.65	83.69	87.16
		CO2	88.65	86.29	87.94
		CO3	94.33	86.29	91.91
		CO4	69.50	85.58	74.33
		CO5	69.50	84.16	73.90
U14EC607	Communication laboratory (Analog, Digital and RF)	CO1	91.49	82.98	88.94
		CO2	94.33	85.34	91.63
		CO3	93.62	86.05	91.35
U14EC609	Digital image processing laboratory	CO1	100	84.16	95.25
		CO2	100	83.69	95.11
		CO3	100	86.29	95.89
U14EC608	VLSI laboratory	CO1	99	83.45	94.34
		CO2	100	83.22	94.96

		CO3	100	86.05	95.82
U14EC610	Mini project	CO1	85.82	84.16	85.32
		CO2	85.82	82.74	84.89
		CO3	95.74	86.05	92.84
U14EC701	Wireless networks	CO1	73.76	95.68	80.34
		CO2	76.60	91.61	81.10
		CO3	80.14	89.69	83.01
		CO4	78.01	81.06	78.93
		CO5	78.01	78.42	78.14
U14EC702	Optical fiber communication	CO1	73.05	95.92	79.91
		CO2	77.30	93.76	82.24
		CO3	78.72	88.73	81.73
		CO4	84.40	76.02	81.88
		CO5	84.40	75.54	81.74
U14EC703	Microwave engineering	CO1	81.56	92.75	84.92
		CO2	82.98	91.55	85.55
		CO3	89.36	89.86	89.51
		CO4	90.07	79.95	87.04
		CO5	90.07	76.09	85.88
U14EC912	Computer hardware and interfacing	CO1	70.40	93.55	77.34
		CO2	73.60	90.86	78.78
		CO3	72.80	87.90	77.33
		CO4	84.80	77.96	82.75
		CO5	84.80	77.15	82.51
U14EC920	Elective Nano electronics	CO1	73.91	95.45	80.38
		CO2	78.26	95.45	83.42
		CO3	82.61	92.42	85.55
		CO4	91.30	81.82	88.46
		CO5	91.30	74.24	86.19
U14EC921	Elective embedded and real time system	CO1	74.63	93.94	80.42
		CO2	80.60	90.91	83.69
		CO3	89.55	88.38	89.20
		CO4	73.88	79.55	75.58
		CO5	73.88	77.53	74.97
U14GE701	Professional ethics	CO1	73.76	98.32	81.13
		CO2	74.47	96.88	81.19
		CO3	75.18	91.13	79.96
		CO4	68.79	77.46	71.39
		CO5	68.79	75.06	70.67
U14EC706	Project phase I	CO1	97.16	93.05	95.93
		CO2	97.16	89.45	94.85
		CO3	97.16	89.21	94.78
U14EC704	Optical and microwave lab	CO1	98.58	92.81	96.85

		CO2	99.29	92.81	97.35
		CO3	98.58	89.45	95.84
U14EC705	Electronics design lab	CO1	99.29	92.81	97.35
		CO2	99.29	91.61	96.99
		CO3	99.29	88.73	96.12
U14EC801	Cellular and Mobile Communication	CO1	52.52	99.25	66.54
		CO2	60.43	98.51	71.85
		CO3	62.59	89.30	70.60
		CO4	64.03	77.44	68.05
		CO5	64.03	75.69	67.53
U14EC802	Disaster Management	CO1	70.50	94.78	77.79
		CO2	75.54	92.54	80.64
		CO3	82.01	88.56	83.98
		CO4	84.89	78.36	82.93
		CO5	84.89	77.61	82.71
U14EC922	Satellite Communication	CO1	56.10	93.00	67.17
		CO2	65.04	92.72	73.34
		CO3	68.29	89.64	74.70
		CO4	69.92	79.27	72.72
		CO5	69.92	77.03	72.05
U14EC925	Telecommunication and Switching Network	CO1	88.06	92.31	89.33
		CO2	89.55	90.26	89.76
		CO3	82.09	87.18	83.62
		CO4	88.06	78.46	85.18
		CO5	88.06	73.85	83.80
U14EC926	Television and Video Processing	CO1	55.68	96.03	67.79
		CO2	65.91	92.46	73.87
		CO3	73.86	88.89	78.37
		CO4	82.95	80.16	82.12
		CO5	82.95	80.16	82.12
U14EC803	Project Phase II	CO1	100.00	93.03	97.91
		CO2	100.00	93.03	97.91
		CO3	100.00	92.29	97.69

3.3 Attainment of Program Outcomes and Program Specific Outcomes (75)

3.3.1.Describe assessment tools and processes used for measuring the attainment of each Program Outcome and Program Specific Outcomes (10)

Direct Assessment:

PO Assessment Tools are categorized into direct and indirect methods to assess the program outcomes and program Specific outcomes.

Continuous internal evaluation, semester end examinations, assignments and seminars are used for CO calculation. Rubric values calculated for individual course are formulated and summed for assessing the POs. The weighted average of the POs for all the courses is calculated.

Indirect Assessment:

- The exit survey is a questionnaire prepared by faculty member and answered by every individual student about the program after the completion of program. This is collected from the graduating students of that year.
- The recruiters survey is obtained from the recruiters of the department during placement drives.

The final PO attainment is sum of 70% of the direct assessment,20% of exit survey and 10% of recruiter survey.