

**SRI INDU COLLEGE OF ENGINEERING AND TECHNOLOGY**

Department of Electronics and Communication Engineering

**CO Assessment Tools**

S. No.	Theory course		
	Tool Used	Frequency	Parameter of assessment
1	Assignment Test	2 tests per semester	Students scored above the Target Value
2	Internal Assessment Test	2 tests per semester	Students scored above the Target Value
3	End Semester Exams	1 test per semester	Students scored above the Target Value
Laboratory course			
4	Lab day-to-day evaluation	conduction of the lab every week	Students scored above the Target Value
5	Internal Evaluation of Lab	2 tests per semester	Students scored above the Target Value
6	Semester Lab End Examination	1 test per semester	Students scored above the Target Value
7	Seminar	1 time per program	Students scored above the Target Value
8	Comprehensive viva	1 time per program	Students scored above the Target Value
9	Mini project	1 time per program	Students scored above the Target Value
10	Major project	1 time per program	Students scored above the Target Value

	Tool Used	Frequency	Parameter of assessment
1	CO Feedback	2 times in the academic year	Average of all CO feedbacks collected

**SRI INDU COLLEGE OF ENGINEERING AND TECHNOLOGY**

**Department of Electronics and Communication Engineering**

**2019-23 Percentage of Students Attained CO**

<b>S.N O</b>	<b>Course Title</b>	<b>Course Code</b>	<b>CO1</b>	<b>CO2</b>	<b>CO3</b>	<b>CO4</b>	<b>CO5</b>	<b>CO6</b>	<b>% PERCENTAGE OF STUDENTS</b>
1	Mathematics – I	R18MTH110 1	67.0	73.0	81.0	88.0	55.0	85.0	74.8
2	Applied Physics	R18EAP1101	76	55	76	70	63	76	69.3
3	PPS	R18CSE1101	74	80	72	69	69	78	73.7
4	Engineering Graphics	R18MED110 2	83	99	67	44	84	81	76.3
5	Applied Physics Lab	R18EAP12L1	71.6	72.2	71.6	84.2	84.2	84.2	78.0
6	PPS LAB	R18CSE12L1	70.6	65.8	60.4	75.4	73	70.6	69.3
7	Mathematics – II	R18MTH120 1	79	70	87	81	82	79	79.7
8	Chemistry	R18ECH1101	76	73	85	88	83	85	81.7
9	BEE	R18EEE1101	75	70	84	77	79	75	76.7
10	Engineering Workshop	R18MED110 1	88	83	78	67	82	92	81.8
11	English	R18HAS1101	66	49	77	87	69	77	70.8
12	EC Lab	R18ECH12L 1	82.2	75	51.6	90.6	90.6	90.6	80.1
13	ELCS Lab	R18HAS12L 1	83	79	78	87	84	79	81.7
14	BEE Lab	R18EEE12L2	73.2	73.2	73.2	73.8	73.8	73.8	73.5
15	EDC	R18ECE2101	84	78	90	81	100	44	79.5
16	Network Theory	R18EEE2107	86	77	75	79	60	88	77.5
17	Digital Logic Design	R18ECE2102	85	90	73	73	80	71	78.7
18	Signals and Systems	R18ECE2103	85	86	81	73	62	88	79.2
19	PTSP	R18ECE2104	90	90	85	63	95	75	83.0
20	EDC Lab	R18ECE21L1	96	95	96	98	98	98	96.8
21	DLD Lab	R18ECE21L2	61	60	61	69	73	69	65.5
22	BS Lab	R18ECE21L3	59	59	60	68	71	69	64.3
23	LT, NM & CV	R18MTH220 1	77	76	78	79	63	67	73.3
24	EMTL	R18ECE2201	90	99	79	68	74	69	79.8
25	ADC	R18ECE2202	98	94	78	76	73	76	82.5

26	LDIC	R18ECE2203	80	84	71	82	91	69	79.5
27	ECA	R18ECE2204	90	68	81	63	81	62	74.2
28	ADC Lab	R18ECE22L1	90	83	93	100	100	95	93.5
29	ICA Lab	R18ECE22L2	59	61	60	57	58	63	59.7
30	ECA Lab	R18ECE22L3	54	54	55	75	73	66	62.8
31	BEFA	R18MBA220 1	71	82	62	93	89	71	78.0
32	MPMC	R18ECE3101	81	73	56	67	75	68	70.0
33	DCN	R18INF3103	84	88	83	54	63	72	74.0
34	CS	R18EEE2202	59	58	74	65	77	100	72.2
35	COOS	R18CSE3114	75	56	76	97	69	63	72.7
36	MPMC Lab	R18ECE31L1	97	97	97	97	95	96	96.5
37	DCN Lab	R18INF31L2	61.4	70.4	61.4	56.2	55	55.6	60.0
38	ACS Lab	R18HAS31L 1	78.4	73	74.2	72.3	66	66	71.7
39	AWP	R18ECE3201	73	63	65	71	65	0	56.2
40	DSP	R18ECE3202	76	73	54	82	78	73	72.7
41	VLSI Design	R18ECE3203	94	88	63	87	80	78	81.7
42	ESD	R18ECE322 1	69	75	78	82	90	55	74.8
43	CE	R18ECE3273	66	74	86	72	100	51	74.8
44	DSP Lab	R18ECE32L1	64.6	64.6	65.2	57.2	56	56	60.6
45	e-CAD Lab	R18ECE32L2	76.0 0	76.0 0	76.0 0	66.4 0	66.4 0	71.8 0	72.1
46	MWE & OC	R18ECE4101	70	73	77	100	69	68	76.2
47	PPLE	R18HAS4101	79	87	66	68	73	84	76.2
48	DIP	R18ECE4131	67	66	84	73	79	84	75.5
49	CMC	R18ECE4141	64	49	75	91	90	88	76.2
50	PMCS	R18ECE4183	57	58	75	67	68	100	70.8
51	MWE & OC Lab	R18ECE41L1	60	61	60	60	69	69	63.2
52	SC	R18ECE4251	61	57	83	70	83	66	70.0
53	RADAR	R18ECE4263	40	100	84	78	99	83	80.7
54	AVE	R18ECE4293	82	71	73	80	69	60	72.5

**SRI INDU COLLEGE OF ENGINEERING AND TECHNOLOGY**

**Department of Electronics and Communication Engineering**

**2019-23 CO DIRECT (CIE) Attainment**

S.NO	Course Title	Course Code	CO1	CO2	CO3	CO4	CO5	CO6	Overall CIE Attainment
1	Mathematics – I	R18MTH1101	3.0	3.0	3.0	3.0	2.0	3.0	2.83
2	Applied Physics	R18EAP1101	3	2.5	3	3	3	3	2.92
3	PPS	R18CSE1101	3	3	3	3	3	3	3.00
4	Engineering Graphics	R18MED1102	3	3	3	1.4	3	3	2.73
5	Applied Physics Lab	R18EAP12L1	3	3	3	3	3	3	3.00
6	PPS LAB	R18CSE12L1	3	2	2	3	3	3	2.67
7	Mathematics – II	R18MTH1201	3	3	3	3	3	3	3.00
8	Chemistry	R18ECH1101	3	3	3	3	3	3	3.00
9	BEE	R18EEE1101	3	3	3	3	3	3	3.00
10	Engineering Workshop	R18MED1101	3	3	3	3	3	3	3.00
11	English	R18HAS1101	3	1	3	3	3	3	2.67
12	EC Lab	R18ECH12L1	3	3	1	3	3	3	2.67
13	ELCS Lab	R18HAS12L1	3	3	3	3	3	3	3.00
14	BEE Lab	R18EEE12L2	3	3	3	3	3	3	3.00
15	EDC	R18ECE2101	3	3	3	3	3	1	2.67
16	Network Theory	R18EEE2107	3	3	3	3	3	3	3.00
17	Digital Logic Design	R18ECE2102	3	3	3	3	3	3	3.00
18	Signals and Systems	R18ECE2103	3	3	3	3	3	3	3.00
19	PTSP	R18ECE2104	3	3	3	3	3	3	3.00
20	EDC Lab	R18ECE21L1	3	3	3	3	3	3	3.00
21	DLD Lab	R18ECE21L2	3	3	3	3	3	3	3.00
22	BS Lab	R18ECE21L3	2.9	2.9	3	3	3	3	2.97
23	LT, NM & CV	R18MTH2201	3	3	3	3	2	3	2.83
24	EMTL	R18ECE2201	3	3	3	3	3	3	3.00
25	ADC	R18ECE2202	3	3	3	3	3	3	3.00
26	LDIC	R18ECE2203	3	3	3	3	3	3	3.00
27	ECA	R18ECE2204	3	3	3	3	3	3	3.00
28	ADC Lab	R18ECE22L1	3	3	3	3	3	3	3.00
29	ICA Lab	R18ECE22L2	2.9	3	3	2.7	2.8	3	2.90

30	ECA Lab	R18ECE22L3	1.4	1.4	1.5	3	3	2.6	2.15
31	BEFA	R18MBA2201	3	3	3	3	3	3	3.00
32	MPMC	R18ECE3101	3	3	2.6	3	3	3	2.93
33	DCN	R18INF3103	3	3	3	3	3	3	3.00
34	CS	R18EEE2202	1	1	3	2	3	3	2.17
35	COOS	R18CSE3114	3	3	3	3	3	3	3.00
36	MPMC Lab	R18ECE31L1	3	3	3	3	3	3	3.00
37	DCN Lab	R18INF31L2	3	3	3	2	2	2	2.50
38	ACS Lab	R18HAS31L1	3	3	3	3	2	2	2.67
39	AWP	R18ECE3201	3	3	3	3	3	0	2.50
40	DSP	R18ECE3202	3	3	2	3	3	3	2.83
41	VLSI Design	R18ECE3203	3	3	3	3	3	3	3.00
42	ESD	R18ECE3221	3	3	3	3	3	2	2.83
43	CE	R18ECE3273	3	3	3	2.4	3	2.1	2.75
44	DSP Lab	R18ECE32L1	3	3	3	2	2	2	2.50
45	e-CAD Lab	R18ECE32L2	3	3	3	2	2	3	2.67
46	MWE & OC	R18ECE4101	3	3	3	3	2.9	2.8	2.95
47	PPL	R18HAS4101	3	3	3	2.4	3	2.8	2.87
48	DIP	R18ECE4131	3	3	3	3	3	3	3.00
49	CMC	R18ECE4141	3	2	3	3	3	3	2.83
50	PMCS	R18ECE4183	2.7	2.8	3	3	3	3	2.92
51	MWE & OC Lab	R18ECE41L1	3	3	3	3	3	3	3.00
52	SC	R18ECE4251	3	3	3	3	3	3	3.00
53	RADAR	R18ECE4263	1	3	3	3	3	3	2.67
54	AVE	R18ECE4293	3	3	3	3	3	3	3.00

**SRI INDU COLLEGE OF ENGINEERING AND TECHNOLOGY****Department of Electronics and Communication Engineering****2019-23 CO 80% OF CIE Attainment**

S.NO	Course Title	Course Code	CO1	CO2	CO3	CO4	CO5	CO6	Overall CIE Attainment
1	Mathematics – I	R18MTH1101	2.4	2.4	2.4	2.4	1.6	2.4	2.3
2	Applied Physics	R18EAP1101	2.4	2	2.4	2.4	2.4	2.4	2.3
3	PPS	R18CSE1101	2.4	2.4	2.4	2.4	2.4	2.4	2.4
4	Engineering Graphics	R18MED1102	2.4	2.4	2.4	1.12	2.4	2.4	2.2
5	Applied Physics Lab	R18EAP12L1	2.4	2.4	2.4	2.4	2.4	2.4	2.4
6	PPS LAB	R18CSE12L1	2.4	1.6	1.6	2.4	2.4	2.4	2.1
7	Mathematics – II	R18MTH1201	2.4	2.4	2.4	2.4	2.4	2.4	2.4
8	Chemistry	R18ECH1101	2.4	2.4	2.4	2.4	2.4	2.4	2.4
9	BEE	R18EEE1101	2.4	2.4	2.4	2.4	2.4	2.4	2.4
10	Engineering Workshop	R18MED1101	2.4	2.4	2.4	2.4	2.4	2.4	2.4
11	English	R18HAS1101	2.4	0.8	2.4	2.4	2.4	2.4	2.1
12	EC Lab	R18ECH12L1	2.4	2.4	0.8	2.4	2.4	2.4	2.1
13	ELCS Lab	R18HAS12L1	2.4	2.4	2.4	2.4	2.4	2.4	2.4
14	BEE Lab	R18EEE12L2	2.4	2.4	2.4	2.4	2.4	2.4	2.4
15	EDC	R18ECE2101	2.4	2.4	2.4	2.4	2.4	0.8	2.1
16	Network Theory	R18EEE2107	2.4	2.4	2.4	2.4	2.4	2.4	2.4
17	Digital Logic Design	R18ECE2102	2.4	2.4	2.4	2.4	2.4	2.4	2.4

18	Signals and Systems	R18ECE2103	2.4	2.4	2.4	2.4	2.4	2.4	2.4
19	PTSP	R18ECE2104	2.4	2.4	2.4	2.4	2.4	2.4	2.4
20	EDC Lab	R18ECE21L1	2.4	2.4	2.4	2.4	2.4	2.4	2.4
21	DLD Lab	R18ECE21L2	2.4	2.4	2.4	2.4	2.4	2.4	2.4
22	BS Lab	R18ECE21L3	2.32	2.32	2.4	2.4	2.4	2.4	2.4
23	LT, NM & CV	R18MTH2201	2.4	2.4	2.4	2.4	1.6	2.4	2.3
24	EMTL	R18ECE2201	2.4	2.4	2.4	2.4	2.4	2.4	2.4
25	ADC	R18ECE2202	2.4	2.4	2.4	2.4	2.4	2.4	2.4
26	LDIC	R18ECE2203	2.4	2.4	2.4	2.4	2.4	2.4	2.4
27	ECA	R18ECE2204	2.4	2.4	2.4	2.4	2.4	2.4	2.4
28	ADC Lab	R18ECE22L1	2.4	2.4	2.4	2.4	2.4	2.4	2.4
29	ICA Lab	R18ECE22L2	2.32	2.4	2.4	2.16	2.24	2.4	2.3
30	ECA Lab	R18ECE22L3	1.12	1.12	1.2	2.4	2.4	2.08	1.7
31	BEFA	R18MBA2201	2.4	2.4	2.4	2.4	2.4	2.4	2.4
32	MPMC	R18ECE3101	2.4	2.4	2.08	2.4	2.4	2.4	2.3
33	DCN	R18INF3103	2.4	2.4	2.4	2.4	2.4	2.4	2.4
34	CS	R18EEE2202	0.8	0.8	2.4	1.6	2.4	2.4	1.7
35	COOS	R18CSE3114	2.4	2.4	2.4	2.4	2.4	2.4	2.4
36	MPMC Lab	R18ECE31L1	2.4	2.4	2.4	2.4	2.4	2.4	2.4
37	DCN Lab	R18INF31L2	2.4	2.4	2.4	1.6	1.6	1.6	2.0
38	ALCS Lab	R18HAS31L1	2.4	2.4	2.4	2.4	1.6	1.6	2.1







C323.1	Make use of basic components of digital communication system.	
C323.2	Analyze the error performance of the digital modulation techniques.	
C323.3	Demonstrate the design of optimum receivers for the digital modulation techniques.	
C323.4	Solve the information theory, entropy and source coding techniques.	
C323.5	Compare different error detecting and correcting codes like block codes, cyclic codes and convolution codes.	
C323.6	Classify the performance of spread spectrum, PN codes in jamming, noise etc.	
<b>SPECIFIC LEARNING OUTCOMES – VLSI DESIGN (C324)</b>		
C324.1.	Compare the fabrication process of integrated circuit using MOS transistors.	
C324.2.	Choose an appropriate inverter depending on specifications required for a circuit.	
C324.3.	Sketch the layout and estimate parasitic of any logic circuit.	
C324.4.	Design different types of logic gates using CMOS inverter.	
C324.5.	Design building blocks of data path using gates and memories using MOS transistors.	
C324.6.	Design Programmable logic devices and interpret the concept of testing to improve testability of system.	
<b>SPECIFIC LEARNING OUTCOMES – MICROPROCESSORS AND MICROCONTROLLERS (C325)</b>		
C325.1	Classify the internal details of microprocessors 8086.	
C325.2	Apply the various types of instruction sets of microprocessor 8086 to write programs.	
C325.3	Analyze and apply different interfacing techniques to interface I/O devices with 8086 microprocessor.	
C325.4	Explain the internal details of microcontroller 8051.	
C325.5	Interpret the various types of instruction sets of microcontroller 8051 to write programs.	
C325.6	Analyze and apply different programming techniques to control 8051 supporting peripheral devices in real time.	
<b>SPECIFIC LEARNING OUTCOMES – DIGITAL SIGNAL PROCESSING (C326)</b>		
C326.1	Identify the time, frequency and Z - transform analysis on signals and systems.	
C326.2.	Relationship between DFT and various transforms.	
C326.3	Explain significance of various filter structures and effects of round off errors.	
C326.4	Design Digital Filters for a given specifications.	
C326.5.	Analyze the fast computation of EDFT and appreciate the FFT processing.	
C326.6	Evaluate the multi rate DSP techniques and finite word length effects.	
<b>SPECIFIC LEARNING OUTCOMES – MICROPROCESSOR AND MICROCONTROLLER LAB(C327)</b>		

Batch (2017 - 2021) R16 COURSE END SURVEY (Responses) - Microsoft Excel

Home Insert Page Layout Formulas Data Review View PDFescape Desktop Creator

Clipboard Font Alignment Number Styles Cells Editing

General Objectives										SUBJECT 1: R16HAS1103 Managerial Economics and Financial Analysis					
III YEAR ECE SEM-II (REGULATION -R16)	SECTION	1.Has the course achieved its stated objectives?	2. Have you gained the stated skills?	3. Whether the syllabus is adequate to achieve the objectives?	4. Whether the teacher has helped in acquiring the stated skills?	5. Whether the teacher has given real life applications of the course?	1. Your ability to Analyze the market demand and supply analysis and pricing in different market structures.	2. Your ability to Determine how production functions are carried out and analyze the cost.	3. Your ability to Identify different markets and types of business organization.	4. Your ability to Evaluate how capital budgeting decisions are carried out.	5. Your ability to Adapt the framework for manual accounting process.	6. Your ability to Analyze and interpret financial statements through ratio analysis.			
S. No	Subject Name	CO-1	CO-2	CO-3	CO-4	CO-5	CO-6	Avg.							
1	MEFA	2.35	2.33	2.40	2.34	2.39	2.35	2.36							
2	TV	2.36	2.38	2.40	2.30	2.30	2.46	2.37							
3	DC	2.24	2.29	2.09	2.23	2.25	2.27	2.23							
4	VLSI	2.39	2.34	2.43	2.37	2.41	2.17	2.35							
5	MPMC	2.26	2.34	2.41	2.23	2.37	2.39	2.33							
6	DSP	2.33	2.40	2.19	2.31	2.36	2.51	2.35							
7	MPMC LAB	2.40	2.44	2.41	2.40	2.37	2.43	2.41							
8	DSP LAB	2.48	2.47	2.52	2.45	2.39	2.43	2.46							
9															

Ready | II-I(2017-2021) | II-II 2017-2021 | III - I 2017-2021 | III-II 2017-2021 | IV-I 2017-2021 | IV-II 2017-2021 | Count: 0 Sum: 0 | 96%



**SRI INDU COLLEGE OF ENGINEERING AND TECHNOLOGY****Department of Electronics and Communication Engineering****2019-23 CO Indirect Attainment**

S.NO	Course Title	Course Code	CO1	CO2	CO3	CO4	CO5	CO6	Consolidated CO IN Direct Attainment
1	Mathematics – I	R18MTH1101	2.30	2.32	2.35	2.35	2.31	2.26	2.32
2	Applied Physics	R18EAP1101	2.33	2.29	2.29	2.31	2.27	2.30	2.30
3	PPS	R18CSE1101	2.29	2.31	2.32	2.37	2.35	2.33	2.33
4	Engineering Graphics	R18MED1102	2.37	2.33	2.30	2.26	2.28	2.22	2.29
5	Applied Physics Lab	R18EAP12L1	2.32	2.30	2.28	2.32	2.26	2.25	2.29
6	PPS LAB	R18CSE12L1	2.31	2.29	2.38	2.40	2.30	2.26	2.32
7	Mathematics – II	R18MTH1201	2.05	2.12	2.09	2.10	2.12	2.15	2.10
8	Chemistry	R18ECH1101	2.11	2.17	2.13	2.12	2.06	2.14	2.12
9	BEE	R18EEE1101	2.08	2.18	2.14	2.24	2.17	2.13	2.16
10	Engineering Workshop	R18MED1101	2.15	2.15	2.15	2.03	2.20	2.11	2.13
11	English	R18HAS1101	2.37	2.29	2.32	2.34	2.31	2.27	2.32
12	EC Lab	R18ECH12L1	2.12	2.03	2.10	2.16	2.07	2.14	2.10
13	ELCS Lab	R18HAS12L1	2.32	2.30	2.28	2.32	2.26	2.25	2.29
14	BEE Lab	R18EEE12L2	2.08	2.13	2.12	2.16	2.21	2.11	2.14
15	EDC	R18ECE2101	2.19	2.12	2.04	2.14	2.10	2.29	2.15
16	Network Theory	R18EEE2107	2.20	2.24	2.17	2.10	2.06	2.14	2.15
17	Digital Logic Design	R18ECE2102	2.08	2.20	2.16	2.25	2.26	2.21	2.19
18	Signals and Systems	R18ECE2103	2.14	2.13	2.06	2.00	2.00	2.07	2.07
19	PTSP	R18ECE2104	2.19	2.16	2.14	2.06	2.21	2.16	2.15
20	EDC Lab	R18ECE21L1	2.15	2.15	2.20	2.17	2.23	2.13	2.17
21	DLD Lab	R18ECE21L2	2.14	2.06	2.16	2.16	2.09	2.12	2.12
22	BS Lab	R18ECE21L3	2.07	2.21	2.20	2.13	2.14	2.11	2.14
23	LT, NM & CV	R18MTH2201	2.17	2.10	2.19	2.18	2.19	2.15	2.16
24	EMTL	R18ECE2201	2.11	2.21	2.20	2.11	2.22	2.30	2.19
25	ADC	R18ECE2202	2.06	2.20	2.22	2.07	2.17	2.12	2.14
26	LDIC	R18ECE2203	2.13	2.16	2.08	2.12	2.21	2.19	2.15
27	ECA	R18ECE2204	2.12	2.10	2.18	2.05	2.21	2.17	2.14
28	ADC Lab	R18ECE22L1	2.12	2.17	2.09	2.04	2.26	2.15	2.14
29	ICA Lab	R18ECE22L2	2.08	2.11	2.15	2.09	2.14	2.17	2.13
30	ECA Lab	R18ECE22L3	2.08	2.13	2.13	2.19	2.08	2.09	2.12
31	BEFA	R18MBA2201	2.36	2.30	2.32	2.33	2.39	2.33	2.34

32	MPMC	R18ECE3101	2.25	2.28	2.29	2.36	2.31	2.29	2.30
33	DCN	R18INF3103	2.30	2.28	2.26	2.22	2.26	2.26	2.26
34	CS	R18EEE2202	2.24	2.20	2.20	2.21	2.26	2.27	2.23
35	COOS	R18CSE3114	2.21	2.31	2.29	2.25	2.28	2.29	2.27
36	MPMC Lab	R18ECE31L1	2.25	2.28	2.33	2.32	2.32	2.38	2.31
37	DCN Lab	R18INF31L2	2.25	2.21	2.29	2.33	2.34	2.29	2.29
38	ACS Lab	R18HAS31L1	2.27	2.38	2.25	2.29	2.22	2.25	2.28
39	AWP	R18ECE3201	2.28	2.33	2.36	2.35	2.23	2.42	2.33
40	DSP	R18ECE3202	2.30	2.28	2.26	2.26	2.21	2.31	2.27
41	VLSI Design	R18ECE3203	2.28	2.31	2.24	2.29	2.24	2.34	2.28
42	ESD	R18ECE3221	2.27	2.33	2.33	2.42	2.44	2.32	2.35
43	CE	R18ECE3273	2.34	2.23	2.27	2.34	2.30	2.30	2.30
44	DSP Lab	R18ECE32L1	2.32	2.33	2.30	2.37	2.30	2.41	2.34
45	e-CAD Lab	R18ECE32L2	2.39	2.25	2.25	2.36	2.31	2.39	2.32
46	MWE & OC	R18ECE4101	2.16	2.22	2.20	2.24	2.19	2.20	2.20
47	PPL	R18HAS4101	2.24	2.16	2.13	2.11	2.21	2.20	2.17
48	DIP	R18ECE4131	2.18	2.21	2.20	2.19	2.21	2.19	2.20
49	CMC	R18ECE4141	2.18	2.19	2.09	2.04	2.15	2.14	2.13
50	PMCS	R18ECE4183	2.18	2.06	2.23	2.15	2.16	2.13	2.15
51	MWE & OC Lab	R18ECE41L1	2.16	2.10	2.05	2.07	2.06	2.07	2.08
52	SC	R18ECE4251	2.18	2.25	2.19	2.13	2.09	2.17	2.17
53	RADAR	R18ECE4263	2.16	2.08	2.23	2.13	2.18	2.20	2.16
54	AVE	R18ECE4293	2.22	2.11	2.17	2.22	2.11	2.14	2.16

**SRI INDU COLLEGE OF ENGINEERING AND TECHNOLOGY**

**Department of Electronics and Communication Engineering**

**2019-23 CO Overall Attainment**

S. NO	Course Title	Course	CONSOLIDATED CO DIRECT ATTAINMENT	80% OF CONSOLIDATED CO DIRECT ATTAINMENT	CONSOLIDATED CO INDIRECT ATTAINMENT	20% OF CONSOLIDATED CO INDIRECT ATTAINMENT	CONSOLIDATED Overall CO ATTAINMENT =80% OF DIRECT
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							<b>+20% OF INDIRECT</b>
1	Mathematics – I	R18MTH 1101	2.83	2.27	2.32	0.46	2.73
2	Applied Physics	R18EAP 1101	2.92	2.33	2.30	0.46	2.79
3	PPS	R18CSE 1101	3.00	2.40	2.33	0.47	2.87
4	Engineering Graphics	R18MED 1102	2.73	2.19	2.29	0.46	2.65
5	Applied Physics Lab	R18EAP 12L1	3.00	2.40	2.29	0.46	2.86
6	PPS LAB	R18CSE 12L1	2.67	2.13	2.32	0.46	2.60
7	Mathematics – II	R18MTH 1201	3.00	2.40	2.10	0.42	2.82
8	Chemistry	R18ECH 1101	3.00	2.40	2.12	0.42	2.82
9	BEE	R18EEE 1101	3.00	2.40	2.16	0.43	2.83
10	Engineering Workshop	R18MED 1101	3.00	2.40	2.13	0.43	2.83
11	English	R18HAS 1101	2.67	2.13	2.32	0.46	2.60
12	EC Lab	R18ECH 12L1	2.67	2.13	2.10	0.42	2.55
13	ELCS Lab	R18HAS 12L1	3.00	2.40	2.29	0.46	2.86
14	BEE Lab	R18EEE 12L2	3.00	2.40	2.14	0.43	2.83
15	EDC	R18ECE 2101	2.67	2.13	2.15	0.43	2.56
16	Network Theory	R18EEE 2107	3.00	2.40	2.15	0.43	2.83
17	Digital Logic Design	R18ECE 2102	3.00	2.40	2.19	0.44	2.84
18	Signals and Systems	R18ECE 2103	3.00	2.40	2.07	0.41	2.81
19	PTSP	R18ECE 2104	3.00	2.40	2.15	0.43	2.83
20	EDC Lab	R18ECE 21L1	3.00	2.40	2.17	0.43	2.83

21	DLD Lab	R18ECE 21L2	3.00	2.40	2.12	0.42	2.82
22	BS Lab	R18ECE 21L3	2.97	2.37	2.14	0.43	2.80
23	LT, NM & CV	R18MTH 2201	2.83	2.27	2.16	0.43	2.70
24	EMTL	R18ECE 2201	3.00	2.40	2.19	0.44	2.84
25	ADC	R18ECE 2202	3.00	2.40	2.14	0.43	2.83
26	LDIC	R18ECE 2203	3.00	2.40	2.15	0.43	2.83
27	ECA	R18ECE 2204	3.00	2.40	2.14	0.43	2.83
28	ADC Lab	R18ECE 22L1	3.00	2.40	2.14	0.43	2.83
29	ICA Lab	R18ECE 22L2	2.90	2.32	2.13	0.43	2.75
30	ECA Lab	R18ECE 22L3	2.15	1.72	2.12	0.42	2.14
31	BEFA	R18MB A2201	3.00	2.40	2.34	0.47	2.87
32	MPMC	R18ECE 3101	2.93	2.35	2.30	0.46	2.81
33	DCN	R18INF3 103	3.00	2.40	2.26	0.45	2.85
34	CS	R18EEE 2202	2.17	1.73	2.23	0.45	2.18
35	COOS	R18CSE 3114	3.00	2.40	2.27	0.45	2.85
36	MPMC Lab	R18ECE 31L1	3.00	2.40	2.31	0.46	2.86
37	DCN Lab	R18INF3 1L2	2.50	2.00	2.29	0.46	2.46
38	ACS Lab	R18HAS 31L1	2.67	2.13	2.28	0.46	2.59
39	AWP	R18ECE 3201	2.50	2.00	2.33	0.47	2.47
40	DSP	R18ECE 3202	2.83	2.27	2.27	0.45	2.72
41	VLSI Design	R18ECE 3203	3.00	2.40	2.28	0.46	2.86
42	ESD	R18ECE 3221	2.83	2.27	2.35	0.47	2.74
43	CE	R18ECE 3273	2.75	2.20	2.30	0.46	2.66



44	DSP Lab	R18ECE 32L1	2.50	2.00	2.34	0.47	2.47
45	e-CAD Lab	R18ECE 32L2	2.67	2.13	2.32	0.46	2.60
46	MWE & OC	R18ECE 4101	2.95	2.36	2.20	0.44	2.80
47	PPL	R18HAS 4101	2.87	2.29	2.17	0.43	2.73
48	DIP	R18ECE 4131	3.00	2.40	2.20	0.44	2.84
49	CMC	R18ECE 4141	2.83	2.27	2.13	0.43	2.69
50	PMCS	R18ECE 4183	2.92	2.33	2.15	0.43	2.76
51	MWE & OC Lab	R18ECE 41L1	3.00	2.40	2.08	0.42	2.82
52	SC	R18ECE 4251	3.00	2.40	2.17	0.43	2.83
53	WCN	R18ECE 4261	2.67	2.13	2.16	0.43	2.57
54	AVE	R18ECE 4293	3.00	2.40	2.16	0.43	2.83

**SRI INDU COLLEGE OF ENGINEERING AND TECHNOLOGY**

**Department of Electronics and Communication Engineering**

**2019-23 PO/PSO Direct Attainment**

S. N O	Cour se Title	Cours e Code	P O 1	P O 2	P O 3	P O 4	PO5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PS O1	PS O2	PS O3
1	Mathe matics –I	R18M TH110 1	2.42	2.42	2.90	2.78	-	-	-	-	-	-	-	1.42	2.41	0.96	2.91
2	Appli ed	R18EA P1101	2.55	2.28	2.28	2.29	1.13	-	0.76	-	-	-	-	1.13	0.38	2.28	1.53



	Theory																	
17	Digital Logic Design	R18ECE2102	2.39	0.40	2.09	1.20	2.39	0.40	0.40	-	0.40	-	-	1.19	2.39	1.99	1.20	
18	Signals and Systems	R18ECE2103	1.96	-	1.19	0.08	1.96	-	0.33	0.33	0.33	-	0.33	-	1.97	1.31	0.98	
19	PTSP	R18ECE2104	2.39	0.40	2.39	0.00	2.39	0.40	0.40	0.40	0.40	0.40	-	-	1.59	1.19	1.19	
20	EDC Lab	R18ECE21L1	2.53	0.42	2.53	1.27	2.53	0.42	0.42	0.42	0.42	0.42	-	-	1.69	0.42	2.11	
21	DLD Lab	R18ECE21L2	2.11	-	2.11	1.05	2.11	-	0.35	0.35	1.05	0.35	-	0.35	2.11	1.05	0.35	
22	BS Lab	R18ECE21L3	1.95	0.33	1.95	0.68	1.95	0.33	0.33	0.33	0.33	0.33	-	-	1.96	1.31	1.30	
23	LT, NM & CV	R18MTH2201	1.21	-	1.21	0.99	1.21	-	-	-	-	-	-	0.40	-	-	-	
24	EMT L	R18ECE2201	2.46	0.41	2.46	1.31	2.46	0.41	0.41	0.41	0.41	0.41	-	-	2.46	1.23	2.46	
25	ADC	R18ECE2202	1.09	-	1.09	0.89	1.09	-	0.36	-	-	-	-	-	1.09	-	1.09	
26	LDIC	R18ECE2203	2.25	-	2.25	1.50	2.25	-	-	0.37	0.37	0.37	0.38	0.38	0.75	1.12	1.12	
27	ECA	R18ECE2204	1.33	-	1.33	1.07	1.33	-	-	0.44	0.44	0.45	0.44	0.45	1.78	0.89	1.33	
28	ADC Lab	R18ECE22L1	1.12	-	1.12	1.12	1.12	-	-	0.37	1.12	1.12	-	-	1.12	0.75	1.13	
29	ICA Lab	R18ECE22L2	1.46	-	1.46	1.09	1.46	-	0.48	0.49	1.46	0.49	-	-	1.46	0.49	0.97	
30	ECA Lab	R18ECE22L3	1.23	-	1.23	1.11	1.23	-	0.42	0.40	1.24	0.39	-	-	1.22	-	0.41	

31	BEFA	R18M BA220 1	-	0. 3 8	0. 3 8	-	1.13	-	0.3 8	0.3 8	0.3 8	0.3 8	0.7 5	0.3 8	0.3 8	0.3 8	0.3 8
32	MPM C	R18EC E3101	1. 7 8	2. 6 4	1. 7 9	1. 3 4	1.34	0.4 5	-	0.4 4	0.4 4	0.4 5	0.4 5	0.4 5	1.7 8	0.4 4	2.6 8
33	DCN	R18IN F3103	2. 0 8	0. 8 3	0. 6 0	0. 8 8	0.90	-	-	0.1 7	0.1 7	0.1 7	0.1 7	0.1 7	2.0 8	0.1 7	1.3 3
34	CS	R18EE E2202	2. 4 5	2. 6 5	0. 4 3	0. 4 7	2.74	0.4 3	-	0.4 7	0.4 7	0.4 7	-	-	1.6 0	0.4 5	2.8 1
35	COOS	R18CS E3114	1. 7 8	1. 3 4	2. 2 3	2. 2 3	2.68	-	0.4 5	0.4 5	0.4 5	-	0.4 5	-	0.8 9	1.3 4	1.3 4
36	MPM C Lab	R18EC E31L1	2. 3 5	1. 4 1	2. 8 2	2. 8 2	1.41	0.4 7	-	0.4 7	0.4 7	0.4 7	0.4 7	0.4 7	2.8 2	1.8 8	1.4 1
37	DCN Lab	R18IN F31L2	2. 3 8	1. 9 5	1. 4 6	-	1.42	0.4 7	-	0.4 7	0.4 7	0.4 5	-	0.4 5	2.3 8	0.9 5	1.4 3
38	ACS Lab	R18HA S31L1	-	0. 4 7	-	-	1.42	-	-	0.4 7	0.4 8	2.8 4	0.4 7	0.4 7	-	-	0.4 8
39	AWP	R18EC E3201	1. 5 5	1. 1 7	1. 1 0	1. 9 4	1.82	-	-	0.3 3	0.3 3	0.3 9	-	0.3 3	1.1 6	0.3 9	0.9 3
40	DSP	R18EC E3202	0. 9 4	1. 1 5	0. 9 4	1. 0 1	1.46	0.0 8	-	0.0 5	0.0 7	0.0 8	0.0 8	0.0 8	1.0 2	1.7 3	-
41	VLSI Desig n	R18EC E3203	1. 7 4	1. 7 4	2. 6 1	2. 6 1	1.30	0.4 3	0.4 3	0.4 3	0.4 3	-	0.4 3	0.4 3	1.7 4	0.8 7	1.3 0
42	ESD	R18EC E3221	1. 8 8	2. 2 6	0. 3 6	2. 1 4	2.14	-	0.3 6	0.3 8	0.3 8	1.1 3	1.0 5	-	2.2 4	1.0 9	2.1 4
43	CE	R18EC E3273	2. 4 6	1. 4 8	1. 4 5	0. 4 7	1.46	-	-	0.4 7	0.4 7	0.4 7	0.4 9	-	2.4 6	1.4 6	2.9 3
44	DSP Lab	R18EC E32L1	1. 8 3	1. 1 3	1. 8 7	0. 3 2	1.81	0.3 0	-	0.3 0	0.3 0	0.3 0	0.3 0	0.3 0	1.4 7	1.1 5	0.8 8
45	e-CAD Lab	R18EC E32L2	1. 7 0	0. 4 4	-	1. 2 9	1.25	-	0.4 4	0.3 9	0.4 3	0.4 3	-	-	2.1	1.2 6	0.4 4

46	MWE & OC	R18ECE4101	2.53	1.27	2.11	1.26	0.42	-	-	0.42	-	-	-	1.69	-	1.27	
47	PPLE	R18HAS4101	-	-	-	-	2.73	1.36	2.71	1.36	1.35	0.45	0.90	-	-	-	
48	DIP	R18ECE4131	1.99	1.99	1.22	1.22	2.46	-	0.41	0.41	0.40	0.41	1.20	0.41	2.43	2.40	2.46
49	CMC	R18ECE4141	1.85	1.93	0.37	2.33	2.29	-	0.39	0.37	0.39	1.08	1.16	-	1.08	1.16	1.16
50	PMCS	R18ECE4183	2.14	1.28	1.28	1.29	0.43	-	-	0.43	0.43	0.42	-	-	1.29	0.43	1.29
51	MWE & OC Lab	R18ECE41L1	1.54	2.27	1.21	1.26	1.92	-	0.39	0.17	0.17	0.31	-	-	0.39	0.39	0.39
52	SC	R18ECE4251	2.18	1.45	1.09	1.45	2.18	-	0.73	0.36	0.36	0.36	0.36	-	2.18	1.09	2.18
53	RADAR	R18ECE4263	-	2.53	0.42	1.27	2.29	-	0.34	0.42	0.42	0.42	0.42	-	1.23	0.39	2.29
54	AVE	R18ECE4293	0.80	0.40	-	0.40	1.20	-	0.40	-	-	-	-	-	0.40	-	1.19
	<b>Curriculum average mapping</b>		<b>1.85</b>	<b>1.69</b>	<b>1.37</b>	<b>1.33</b>	<b>1.66</b>	<b>0.89</b>	<b>0.75</b>	<b>0.56</b>	<b>0.64</b>	<b>0.71</b>	<b>0.62</b>	<b>0.87</b>	<b>1.54</b>	<b>1.20</b>	<b>1.44</b>
	<b>No.of. courses mapped</b>		<b>49</b>	<b>52</b>	<b>47</b>	<b>46</b>	<b>48</b>	<b>20</b>	<b>32</b>	<b>38</b>	<b>43</b>	<b>34</b>	<b>23</b>	<b>27</b>	<b>49</b>	<b>44</b>	<b>45</b>

**SRI INDU COLLEGE OF ENGINEERING AND TECHNOLOGY**

**Department of Electronics and Communication Engineering**

**Summary of PO Attainment based on Indirect method**

**ACADEMIC YEAR 2023-2024**

**ALUMNI FEEDBACK :: TOTAL -110**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	PO1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PS O1	PS O2	PS O3
1	28	26	30	28	30	28	29	27	29	30	28	29	28	30	31
2	42	44	44	44	40	42	43	43	42	40	42	42	40	42	42
3	40	40	36	38	40	40	40	40	41	40	40	39	42	38	37
Total Score	232	234	226	230	230	230	230	230	230	230	230	230	230	230	230
Weighted Average	2.11	2.13	2.07	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05

**EXIT SURVEY :: TOTAL NO.OF STUDENTS-220**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	PO1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PS O1	PS O2	PS O3
1	80	84	82	84	82	80	83	80	80	82	84	85	89	84	80
2	70	70	70	70	68	68	70	66	74	70	68	70	70	70	68
3	70	66	68	66	70	72	67	74	66	68	68	65	61	66	72
Total Score	430	426	424	420	412	422	432	432	426	424	420	412	422	432	432
Weighted Average	1.95	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.96

**EMPLOYER FEEDBACK :: TOTAL -30**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	PO1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PS O1	PS O2	PS O3
1	19	10	14	9	13	15	14	14	10	13	13	12	14	15	12
2	7	15	3	11	10	8	9	10	10	10	11	10	10	8	9
3	4	5	13	10	7	7	7	6	10	7	6	8	6	7	9
Total Score	45	55	59	61	54	52	53	52	60	54	53	56	52	52	57
Weighted Average	1.50	1.73	1.73	1.90	1.73	1.73	1.73	1.73	1.90	1.73	1.73	1.73	1.73	1.73	1.90

**PARENTS FEEDBACK :: TOTAL -30**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	PO1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PS O1	PS O2	PS O3

1	11	12	12	10	11	11	10	10	11	11	10	10	11	10	11
2	9	9	9	9	9	9	9	9	9	9	10	9	9	11	9
3	10	9	9	11	10	10	11	11	10	10	10	11	10	9	10
Total Score	59	57	57	61	59	59	61	61	59	59	60	61	59	59	59
Weighted Average	1.97	1.90	1.90	2.03	1.97	1.97	2.03	2.03	1.97	1.97	2.00	2.03	1.97	1.97	1.97

### PROFESSIONAL SOCIETY MEMBERS FEEDBACK :: TOTAL -20

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	PO1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PS O1	PS O2	PS O3
1	10	11	9	11	9	9	9	11	11	12	11	11	9	9	10
2	7	7	8	7	8	7	8	5	6	7	8	8	8	7	7
3	3	2	3	2	3	4	3	4	3	1	1	1	3	4	3
Total Score	33	31	34	31	34	35	34	33	32	29	30	30	34	35	33
Weighted Average	1.65	1.55	1.70	1.55	1.70	1.75	1.70	1.65	1.60	1.45	1.50	1.50	1.70	1.75	1.65

### Summary of attainment based on indirect method

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
ASSESSMENT MODES	PO1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PS O1	PS O2	PS O3
ALUMNI FEEDBACK	2.11	2.13	2.05	2.09	2.09	2.11	2.14	2.12	2.15	2.09	2.11	2.09	2.13	2.07	2.05
EXIT SURVEY	1.95	1.92	1.94	1.92	1.95	1.96	1.93	1.97	1.94	1.94	1.93	1.91	1.87	1.92	1.96
EMPLOYER FEEDBACK	1.50	1.83	1.97	2.03	1.80	1.73	1.73	1.73	2.00	1.80	1.77	1.87	1.73	1.73	1.90
PARENTS FEEDBACK	1.97	1.90	1.90	2.03	1.97	1.97	2.03	2.03	1.97	1.97	2.00	2.03	1.97	1.97	1.97
PROFESSIONAL SOCIETY MEMBER FEEDBACK	1.65	1.55	1.70	1.55	1.70	1.75	1.70	1.65	1.60	1.45	1.50	1.50	1.70	1.75	1.65
AVERAGE	1.84	1.87	1.91	1.93	1.90	1.90	1.91	1.90	1.93	1.85	1.88	1.88	1.88	1.89	1.91

**SRI INDU COLLEGE OF ENGINEERING AND TECHNOLOGY**

**Department of Electronics and Communication Engineering**

**2019-23 PO/PSO Overall Attainment**

**3.3.2 b: Indirect PO & PSO Attainment (2019-23):**

<b>Summary of attainment based on indirect method</b>															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
ASSESSMENT MODES	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PS O1	PS O2	PS O3
ALUMNI FEEDBACK	2.1 1	2. 13	2. 05	2. 09	2. 09	2. 11	2. 14	2. 12	2. 15	2.0 9	2.1 1	2.0 9	2.1 3	2.0 7	2.0 5
EXIT SURVEY	1.9 5	1. 92	1. 94	1. 92	1. 95	1. 96	1. 93	1. 97	1. 94	1.9 4	1.9 3	1.9 1	1.8 7	1.9 2	1.9 6
EMPLOYER FEEDBACK	1.5 0	1. 83	1. 97	2. 03	1. 80	1. 73	1. 77	1. 73	2. 00	1.8 0	1.7 7	1.8 7	1.7 3	1.7 3	1.9 0
PARENTS FEEDBACK	1.9 7	1. 90	1. 90	2. 03	1. 97	1. 97	2. 03	2. 03	1. 97	1.9 7	2.0 0	2.0 3	1.9 7	1.9 7	1.9 7
PROFESSIONAL SOCIETY MEMBER FEEDBACK	1.6 5	1. 55	1. 70	1. 55	1. 70	1. 75	1. 70	1. 65	1. 60	1.4 5	1.5 0	1.5 0	1.7 0	1.7 5	1.6 5
<b>AVERAGE</b>	<b>1.8 4</b>	<b>1. 87</b>	<b>1. 91</b>	<b>1. 93</b>	<b>1. 90</b>	<b>1. 90</b>	<b>1. 91</b>	<b>1. 90</b>	<b>1. 93</b>	<b>1.8 5</b>	<b>1.8 6</b>	<b>1.8 8</b>	<b>1.8 8</b>	<b>1.8 9</b>	<b>1.9 1</b>

**PO & PSO Overall Attainment (2019-23):**

**80% of direct attainment and 20% of indirect attainment is considered for calculating the Overall PO/PSO attainment.**

PO/PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PS O1	PS O2	PS O3
<b>2019-23 PO/PSO Direct Attainment</b>	<b>1.8 5</b>	<b>1. 69</b>	<b>1. 37</b>	<b>1. 38</b>	<b>1. 66</b>	<b>0. 89</b>	<b>0. 75</b>	<b>0. 56</b>	<b>0. 64</b>	<b>0.7 1</b>	<b>0.6 2</b>	<b>0.8 7</b>	<b>1.5 4</b>	<b>1.2 0</b>	<b>1.4 4</b>
<b>80% of Direct Attainment</b>	1.4 8	1. 35	1. 10	1. 10	1. 33	0. 71	0. 60	0. 45	0. 51	0.5 7	0.5 0	0.6 9	1.2 3	0.9 6	1.1 5
<b>2019-23 PO/PSO Indirect Attainment</b>	<b>1.8 4</b>	<b>1. 87</b>	<b>1. 91</b>	<b>1. 93</b>	<b>1. 90</b>	<b>1. 90</b>	<b>1. 91</b>	<b>1. 90</b>	<b>1. 93</b>	<b>1.8 5</b>	<b>1.8 6</b>	<b>1.8 8</b>	<b>1.8 8</b>	<b>1.8 9</b>	<b>1.9 1</b>
<b>20% of Indirect Attainment</b>	0.3 7	0. 37	0. 38	0. 39	0. 38	0. 38	0. 38	0. 38	0. 39	0.3 7	0.3 7	0.3 8	0.3 8	0.3 8	0.3 8



<b>Overall PO/PSO Attainment= 80% of Direct Attainment+ 20% of Indirect Attainment</b>	1.8 4	1. 73	1. 48	1. 49	1. 71	1. 10	0. 98	0. 83	0. 90	0.9 4	0.8 7	1.0 7	1.6 1	1.3 3	1.5 3
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