



EKNM GOVERNMENT COLLEGE ELERITHATTU
(Established in 1981, Affiliated to Kannur University)

Accredited by NAAC with 'B' Grade

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DOCUMENTARY EVIDENCE FOR

2.6.2. Attainment of POs and COs are evaluated

CO-PO MAPPING INITIATIVES



EKNM Government College Elerithattu

NAAC- Outcome Based Education

CO-PO Mapping/ Attainment Calculation

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Program Outcomes and Program Specific Outcomes

Department:	PHYSICS
Programme:	BSc Physics
Program Outcomes	
PO1	Critical Thinking: Acquire the ability to apply the basic tenets of logic and science to thoughts, actions and interventions. Develop the ability to chart out a progressive direction for actions and interventions by learning to recognize the presence of hegemonic ideology within certain dominant notions. Develop self-critical abilities and the ability to view positions, problems and social issues from plural perspectives.
PO2	Effective Citizenship: Learn to participate in nation building by adhering to the principles of sovereignty of the nation, socialism, secularism, democracy and the values that guide a republic. Develop and practice gender sensitive attitudes, environmental awareness, empathetic social awareness about various kinds of marginalisation and the ability to understand and resist various kinds of discriminations. Internalise certain highlights of the nation's and region's history. Especially of the freedom movement, the renaissance within native societies and the project of modernisation of the post-colonial society.
PO3	Effective Communication: Acquire the ability to speak, write, read and listen clearly in person and through electronic media in both English and in one Modern Indian Language. Learn to articulate, analyse, synthesise, and evaluate ideas and situations in a well informed manner. Generate hypotheses and articulate assent or dissent by employing both reason and creative thinking.
PO4	Interdisciplinarity: Perceive knowledge as an organic, comprehensive, interrelated and integrated faculty of the human mind. Understand the issues of environmental contexts and sustainable development as a basic interdisciplinary concern of all disciplines. Develop aesthetic, social, humanistic and artistic sensibilities for problem solving and evolving a comprehensive perspective
Program Specific Outcomes	
PSO1	Understand and apply the principles of Classical mechanics, Quantum mechanics, Thermodynamics, Nuclear physics and Electrodynamics
PSO2	Understand and apply the principles of Solid state physics, Optics, Photonics and Spectroscopy
PSO3	Understand the principles of Electronics, Design and test electronic circuits
PSO4	Understand and apply the principles of Mathematical Physics and Computational Physics and do Error analysis in measurements

EKNM Government College Elerithattu CO/Course - PO/PSO Mapping			
Department:	PHYSICS		
Programme:	BSc Physics		
Course:	CORE COURSE IV : ELECTRONICS I		
University:	KU	Course Code:	4B04PHY
Semester:	4	Course Outcome Code:	4B04PHY-Co
Course Type:	Core Theory	Credits:	3
Level 3 (% Hours):		Lecture Hours (L):	3
Level 2 (% Hours):		Tutorial Hours (T):	3
Level 1 (% Hours):		Practical Hours (P):	0
Course Outcomes			
4B04PHY-Co.1	Understand the basics of PN junction diode, Zener diode and their applications.		
4B04PHY-Co.2	Understand the structure, operations and characteristics of BJT and FET.		
4B04PHY-Co.3	Understand the biasing methods and design of BJT and FET circuits.		
4B04PHY-Co.4	Understand the different number systems, conversions and binary arithmetic operations.		
4B04PHY-Co.5	Understand the basic combinational logic gates.		
4B04PHY-Co.6	Understand the Boolean algebra & logic simplification using Boolean algebra.		

EKNM Government College Elerithattu CO/Course - PO/PSO Mapping	
Department:	PHYSICS
Programme:	BSc Physics
Course:	CORE COURSE IV : ELECTRONICS I
Instructions for CO-PO Mapping	
<p>1. All the fields with RED title has to be filled. CO - PO/PSO Mapping table and CO PO/PSO Mapping (Hours) table entries are to be filled</p> <p>2. Keep the fields BLANK if there is no entry</p> <p>3. CO - PO/PSO Mapping: a. Enter all the POs and PSOs corresponding to each CO in the CO - PO/PSO Mapping table b. Enter the total number of hours for each CO in the CO - PO/PSO Mapping table</p> <p>4. CO-PO/PSO Mapping Entry: Choose the Mode of Entry - Hours/ Level a. Enter the number of hours contributed/ Level to each PO/PSO corresponding to each CO in CO-PO/PSO Mapping Entry table b. If Mode of entry is Hours, the total number of hours corresponding to each PO/PSO of each CO in CO-PO/PSO Mapping Entry table can be ZERO to Maximum No. of Hours for the corresponding CO and if Level is chosen enter 1, 2 or 3 in the CO - PO/PSO Mapping table c. Keep the field BLANK if the PO/PSO entry correspond to the CO is not there in CO - PO/PSO Mapping Entry table</p>	
Strength of mapping is defined at three levels: Slight or Low (Level 1); Moderate or Medium (Level 2) and Substantial or high (Level 3)	
Mapping Criteria: If Hours is chosen for CO-PO/PSO	
> % : then PO/PSO is Level 3	% - % : then PO/PSO is Level 2
% - % : then PO/PSO is Level 1	< % then PO is considered not-addressed

Course Exit Survey Questions	
4B04PHY-Co.1	How do you rate your confidence level to explain the difference between pn junction
4B04PHY-Co.2	How do you rate your ability to explain structure, operations and characteristics of
4B04PHY-Co.3	How confident you are to explain the biasing methods of BJT and FET?
4B04PHY-Co.4	How is your knowledge on different number systems, conversions and binary arithmetic operations?
4B04PHY-Co.5	How well do you know the basic combinational logic gates?
4B04PHY-Co.6	How good are you now to explain Boolean algebra & logic simplification using Boolean algebra?

Choices
(a) Excellent (b) Very Good (c) Good (d) Fair (e) Poor
(a) Excellent (b) Very Good (c) Good (d) Fair (e) Poor
(a) Excellent (b) Very Good (c) Good (d) Fair (e) Poor
(a) Excellent (b) Very Good (c) Good (d) Fair (e) Poor
(a) Excellent (b) Very Good (c) Good (d) Fair (e) Poor
(a) Excellent (b) Very Good (c) Good (d) Fair (e) Poor

CO - PO/PSO Mapping		
Course Outcome	PO/ PSO Mapping	No of Hours
4B04PHY-Co.1	PO1,PO3, PSO3	8
4B04PHY-Co.2	PO1,PO3,PSO3	12
4B04PHY-Co.3	PO1,PO3,PSO3	10
4B04PHY-Co.4	PO1,PO3,PSO3	8
4B04PHY-Co.5	PO1,PO3,PSO3	5
4B04PHY-Co.6	PO1,PO3,PO4,PSO3	5
Total No. of Hours		48
Direct Entry of Course PO/PSO Mapping Levels		
PO/PSO	LEVEL	
PO1	3	
PO2	2	
PO3	3	
PO4	2	
PSO1	1	
PSO2	3	
PSO3	3	

CO - PO/PSO Mapping Entry (Levels)	Mode of Entry:												Levels		
	PO1	PO2	PO3	PO4	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	PSO1	PSO2	PSO3
4B04PHY-Co.1	1	1	2	2									1	3	3
4B04PHY-Co.2	1	2	3	1									1	3	3
4B04PHY-Co.3	1	2	1	2									1	3	3
4B04PHY-Co.4	3	2	1	1									1	3	3
4B04PHY-Co.5	2	1	3	2									1	3	3
4B04PHY-Co.6	2	1	3	1									1	3	3
Mode of Calculating Course-PO/PSO Mapping Levels if Mode of Entry is Levels												Maximum			

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4B04PHY: CORE COURSE IV : ELECTRONICS I, Academic Year: 2022-2023, Semester: 4

Articulation Matrix - CO-PO/PSO Mapping

Note:

Values in all cells highlighted in green need to be entered

PKL - PO Knowledge Level - Fixed Value, PSO Knowledge Level to be entered

CKL - CO Knowledge Level - To be entered by the user

Articulation Matrix

		PO1	PO2	PO3	PO4				
	PKL	3	4	6	5				
	CKL								
4B04PHY-Co.1	3	0	-1	-3	-2				
4B04PHY-Co.2	4	1	0	-2	-1				
4B04PHY-Co.3	2	-1	-2	-4	-3				
4B04PHY-Co.4	3	0	-1	-3	-2				
4B04PHY-Co.5	4	1	0	-2	-1				
4B04PHY-Co.6	3	0	-1	-3	-2				

Note:

(a). All positive values and -1: Strong Correlation (3)

(b). -2 and -3: Moderate Correlation (2)

(c). -4 and -5: Weak Correlation (1)

(d). Less than -5: No Correlation (0)

The values in the following table may be copied to
"Settings_CO_PO_Mapping" sheet
Please copy CO-PO and CO-PSO mapping values separately

CO-PO/PSO Mapping

	PO1	PO2	PO3	PO4				
4B04PHY-Co.1	1	1	2	2				
4B04PHY-Co.2	1	2	3	1				
4B04PHY-Co.3	1	2	1	2				
4B04PHY-Co.4	3	2	1	1				
4B04PHY-Co.5	2	1	3	2				
4B04PHY-Co.6	2	1	3	1				

EKNM Government College Elerithattu
Settings for CO-Attainment Calculation

Note: Instructions for CO-Attainment Calculation

1. All the fields with RED title has to be Filled

2. Keep the cells blank if the question with choices is not attempted by the student (Do not enter zero).

3. Enter zero marks, even if the student has not attempted the questions which are compulsory.

4. Enter zero for the questions for which the student has got zero marks.

5. If the student has attempted both choices of a question, enter marks for the question the student has got maximum marks and keep the mark for the other question as BLANK.

5. Keep the entry blank if the student is absent for the test.

For any clarifications/ suggestions please contact

Institution:		EKNM Government College Elerithattu																															
Department:		PHYSICS																															
Subject:		CORE COURSE IV : ELECTRONICS I										Course Code:		4B04PHY		Course Outcome Code:		4B04PHY-Co															
Name of Faculty Handling the Subject:		Chithra M																															
Designation of Faculty:		Guest Lecturer																															
Academic Year:		2022-2023		Semester:		4		University:		KU																							
Total Marks of End Semester Examination:		40		Mode of Mark Entry:		Marks		Total Marks of Internal Evaluation:		10																							
% Marks for Pass		40																															
Target for End Semester Examination Attainment Calculation (% Marks):		65 (End Semester Examination)																															
Grade to Mark Mapping:		S		100		A+		90		A		80		B		70		C		60		D		50		E		40		F/FE/FF		=0	
Attainment Levels Thresholds (% of Students):		Level 3		80		Level 2		70		Level 1		60																					
Modes of Internal Evaluation:		IE1 Test 1		IE2 Test 2		IE3 Assignment 1		IE4 Viva																									
Total Marks of Test 1:		20																															
Total Marks of Test 2:		20																															
Total Marks of Assignment 1:		10																															
Total Marks of Viva:		10																															
Internal Assessment Contribution (%):		Test 1		15		Test 2		15		Assignment 1		20		Viva		20																	
Direct Assessment Contribution (%):		Internal		20		End Semester Exam		80																									
Overall Assessment Contribution (%):		Direct		90		Indirect		10																									
Course Outcome Code		Target - Overall CO Attainment (% Marks)		Target - Direct CO Attainment (% Students)		Course Outcomes																											
4B04PHY-Co.1		80		70		Understand the basics of PN junction diode, Zener diode and their applications.																											
4B04PHY-Co.2		80		70		Understand the structure, operations and characteristics of BJT and FET.																											
4B04PHY-Co.3		80		70		Understand the biasing methods and design of BJT and FET circuits.																											
4B04PHY-Co.4		80		70		Understand the different number systems, conversions and binary arithmetic operations.																											
4B04PHY-Co.5		80		70		Understand the basic combinational logic gates.																											
4B04PHY-Co.6		80		70		Understand the Boolean algebra & logic simplification using Boolean algebra.																											
Student Wise Attentment Levels Thresholds (% of Marks):		4B04PHY-Co.1		4B04PHY-Co.2		4B04PHY-Co.3		4B04PHY-Co.4		4B04PHY-Co.5		4B04PHY-Co.6																					
		Level 3		Level 2		Level 1		Level 3		Level 2		Level 1		Level 3		Level 2		Level 1															
		80		60		40		80		60		40		80		60		40															
Test 1 Mapping																																	
Question Numbers		Q1		Q2		Q3		Q4		Q5		Q6		Q7		Q8																	
Maximum Mark		1		1		2		2		3		3		3		5																	
CO Mapping		CO1		CO3		CO2		CO1		CO1		CO3		CO3		CO2																	
Test 2 Mapping																																	
Question Numbers		Q1		Q2		Q3		Q4		Q5		Q6		Q7		Q8																	
Maximum Mark		1		1		2		2		3		3		3		5																	
CO Mapping		CO4		CO6		CO5		CO4		CO4		CO6		CO6		CO5																	
Assignment 1 Mapping																																	
Question Numbers		Q1		Q2		Q3		Q4		Q5		Q6		Q7		Q8		Q9		Q10													
Maximum Mark		1		1		1		1		1		1		1		1		1		1													
CO Mapping		CO1		CO1		CO2		CO2		CO3		CO3		CO4		CO4		CO5		CO6													
Viva Mapping																																	
Question Numbers		Q1		Q2		Q3		Q4		Q5		Q6		Q7		Q8		Q9		Q10													
Maximum Mark		1		1		1		1		1		1		1		1		1		1													
CO Mapping		CO1		CO2		CO3		CO3		CO4		CO4		CO5		CO5		CO6		CO6													

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Students List - Academic Year: 2022-2023, Semester- 4

Course: 4B04PHY CORE COURSE IV : ELECTRONICS I

Roll No.	KU ID	Student Name
01/PHY/21	EK21CPHR01	Alan Francis
02/PHY/21	EK21CPHR02	Aswin Kumar T S
05/PHY/21	EK21CPHR04	Midhun Mohan
06/PHY/21	EK21CPHR05	Muhammad Asif N M
07/PHY/21	EK21CPHR06	Muhammad Sinan
08/PHY/21	EK21CPHR07	Aishwarya Babu PV
11/PHY/21	EK21CPHR09	Aswin M K
12/PHY/21	EK21CPHR10	Devika K
13/PHY/21	EK21CPHR11	Jesbin Biju
15/PHY/21	EK21CPHR13	Sarangi P K

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EKNM Government College Elerithattu

Course Outcome - Direct Attainment for 4B04PHY: CORE COURSE IV : ELECTRONICS I, Academic: 2022-2023, Semester: 4

Internal Assessment-1 (Test 1) Marks and Attainment

Sl. No.	Roll No.	KU ID	Student Name	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8											Total (20)	Internal Evaluation-1 (Test 1)			
				1	1	2	2	3	3	3	5												CO	No. of Questions	% Students CO Attainment	Test Wise Attainment Level
				CO1	CO3	CO2	CO1	CO1	CO3	CO3	CO2															
1	01/PHY/21	EK21CPHR01	Alan Francis	1	1	2	2	3	3	3	5											20				
2	02/PHY/21	EK21CPHR02	Aswin Kumar T S	1	1	2	1	1	2	2	4											14	4B04PHY- Co 1	3	50.00	0
3	05/PHY/21	EK21CPHR04	Midhun Mohan	1	1	2	2	3	3	3	5											20	4B04PHY- Co 2	2	90.00	3
4	06/PHY/21	EK21CPHR05	Muhammad Asif N M	1	1	2	0	1	2.5	2	4											13.5	4B04PHY- Co 3	3	50.00	0
5	07/PHY/21	EK21CPHR06	Muhammad Sinan	1	1	2	2	3	3	3	5											20	4B04PHY- Co 4	0		
6	08/PHY/21	EK21CPHR07	Aishwarya Babu PV	1	0	1	0	1	2	0	2											7	4B04PHY- Co 5	0		
7	11/PHY/21	EK21CPHR09	Aswin M K	1	1	2	1	2	0	2	4											13	4B04PHY- Co 6	0		
8	12/PHY/21	EK21CPHR10	Devika K	1	1	2	2	3	3	3	5											20				
9	13/PHY/21	EK21CPHR11	Jesbin Biju	1	1	2	2	3	3	3	5											20				
10	15/PHY/21	EK21CPHR13	Sarangi P K	1	1	2	2	0	2	2	4											14				

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EKNM Government College Elerithattu

Course Outcome - Direct Attainment for 4B04PHY: CORE COURSE IV : ELECTRONICS I, Academic Year: 2022-2023, Semester: 4

Internal Assessment-2 (Test 2) Marks and Attainment

Sl. No.	Roll No.	KU ID	Student Name	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8										Total (20)	Internal Evaluation-2 (Test 2)					
				1	1	2	2	3	3	3	5													CO	No. of Questions	% Students CO Attainment	Test Wise Attainment Level
				CO4	CO6	CO5	CO4	CO4	CO6	CO6	CO5																
1	01/PHY/21	EK21CPHR01	Alan Francis	1	1	2	1	2	1	3	3										14						
2	02/PHY/21	EK21CPHR02	Aswin Kumar T S	1	0	2	2	1	1.5	2	4										13.5	4B04PHY- CO1	0				
3	05/PHY/21	EK21CPHR04	Midhun Mohan	1	1	2	2	3	3	3	5										20	4B04PHY- CO2	0				
4	06/PHY/21	EK21CPHR05	Muhammad Asif N M	1	0	1	1	3	2	3	3										14	4B04PHY- CO3	0				
5	07/PHY/21	EK21CPHR06	Muhammad Sinan	0	1	1	2	3	1	3	2										13	4B04PHY- CO4	3	50.00	0		
6	08/PHY/21	EK21CPHR07	Aishwarya Babu PV	0	1	2	1	2	3	0	4										13	4B04PHY- CO5	2	50.00	0		
7	11/PHY/21	EK21CPHR09	Aswin M K	1	1	2	1	1	3	2	2										13	4B04PHY- CO6	3	40.00	0		
8	12/PHY/21	EK21CPHR10	Devika K	1	1	2	2	3	3	3	5										20						
9	13/PHY/21	EK21CPHR11	Jesbin Biju	1	0	1	1	2	3	2	3										13						
10	15/PHY/21	EK21CPHR13	Sarang P K	1	1	2	2	3	3	3	5										20						

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EKNM Government College Elerithattu

Course Outcome - Direct Attainment for 4B04PHY: CORE COURSE IV : ELECTRONICS I, Academic Year: 2022-2023, Semester: 4

Internal Assessment-3 (Assignment 1) Marks and Attainment

Sl. No.	Roll No.	KU ID	Student Name	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10								Total (10)	Internal Evaluation-3 (Assignment 1)					
				1	1	1	1	1	1	1	1	1												CO	No. of Questions	% Students CO Attainment	Test Wise Attainment Level
				CO1	CO1	CO2	CO2	CO3	CO3	CO4	CO4	CO5	CO6														
1	01/PHY/21	EK21CPHR01	Alan Francis	1	1	1	1	1	1	1	1	1	1								10						
2	02/PHY/21	EK21CPHR02	Aswin Kumar T S	0	0	1	0	1	1	0	1	0	1								5	4B04PHY- Co 1	2	60.00	1		
6	08/PHY/21	EK21CPHR07	Aishwarya Babu PV	1	0	0	1	0	0	1	0	1	1								5	4B04PHY- Co 1	1	80.00	3		
7	11/PHY/21	EK21CPHR09	Aswin M K	1	1	0	0	0	0	1	1	1	0								5	4B04PHY- Co 5	1	90.00	3		
8	12/PHY/21	EK21CPHR10	Devika K	1	1	1	1	1	1	1	1	1	1								10						
9	13/PHY/21	EK21CPHR11	Jesbin Biju	1	1	1	1	1	1	1	1	1	1								10						
10	15/PHY/21	EK21CPHR13	Sarangi P K	1	0	0	0	1	1	0	0	1	1								5						

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Course Outcome - Direct Attainment for 4B04PHY: CORE COURSE IV : ELECTRONICS I, Academic Year: 2022-2023, Semester: 4

Internal Assessment-4 (Viva) Marks and Attainment

Sl. No.	Roll No.	KU ID	Student Name	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10								Total (10)	Internal Evaluation-4 (Viva)					
				1	1	1	1	1	1	1	1	1	1											CO	No. of Questions	% Students CO Attainment	Test Wise Attainment Level
				CO1	CO2	CO3	CO3	CO4	CO4	CO5	CO5	CO6	CO6														
1	01/PHY/21	EK21CPHR01	Alan Francis	1	1	0	0	0	0	1	0	1	1								5						
8	12/PHY/21	EK21CPHR10	Devika K	1	1	1	1	1	1	1	1	1	1								10						
9	13/PHY/21	EK21CPHR11	Jesbin Biju	1	0	0	1	1	0	0	1	0	1								5						
10	15/PHY/21	EK21CPHR13	Sarangi P K	1	1	1	1	1	1	1	1	1	1								10						

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EKNM Government College Elerithattu

Course Outcome - Direct Attainment for 4B04PHY: CORE COURSE IV :
ELECTRONICS I, Academic Year: 2022-2023, Semester: 4

End Semester Examination Marks and Attainment

Roll No.	KU REG ID	Student Name	Marks Entry	Total Marks (40)	End Semester Examination			
01/PHY/21	EK21CPHR01	Alan Francis	16	16	Threshold Marks (%)			65
02/PHY/21	EK21CPHR02	Aswin Kumar T S	19	19	Number of Students Appeared:			10
05/PHY/21	EK21CPHR04	Midhun Mohan	26	26	Number of Students Achieved the CO Attainment Threshold:			4
06/PHY/21	EK21CPHR05	Muhammad Asif N M	23	23	% of Students Achieved the CO Attainment Threshold:			40.00
07/PHY/21	EK21CPHR06	Muhammad Sinan	39	39	CO Attainment Level:			0
08/PHY/21	EK21CPHR07	Aishwarya Babu PV	22	22				
11/PHY/21	EK21CPHR09	Aswin M K	7	7				
12/PHY/21	EK21CPHR10	Devika K	39	39				
13/PHY/21	EK21CPHR11	Jesbin Biju	24	24				
15/PHY/21	EK21CPHR13	Sarangi P K	33	33				

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EKNM Government College Elerithattu

Course Outcome - Indirect Attainment for 4B04PHY: CORE COURSE IV :
ELECTRONICS I, Academic Year: 2022-2023, Semester: 4

Indirect Assessment - Course Exit Survey

Sl. No.	Student Name	CES	CES	CES	CES	CES	CES	Indirect Assessment - Course Exit Survey			
		Q1	Q2	Q3	Q4	Q5	Q6	CO	No. of Questions	% Students CO Attainment	Survey Wise Attainment Level
		5	5	5	5	5	5				
CO1	CO2	CO3	CO4	CO5	CO6						
1	Student 1	4	4	3	4	4	2				
2	Student 2	5	5	5	5	5	5	4B04PHY- Co 1	1	50.00	0
3	Student 3	3	4	5	3	5	2	4B04PHY- Co 2	1	50.00	0
4	Student 4	4	3	2	1	4	3	4B04PHY- Co 3	1	20.00	0
5	Student 5	4	4	3	2	3	4	4B04PHY- Co 4	1	50.00	0
6	Student 6	3	3	3	4	3	4	4B04PHY- Co 5	1	50.00	0
7	Student 7	4	5	3	5	4	5	4B04PHY- Co 6	1	50.00	0
8	Student 8	2	2	2	4	2	4				
9	Student 9	2	3	3	3	3	3				
10	Student 10	1	1	2	2	1	2				

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EKNM Government College Elerithattu

Course Outcome - Direct Attainment for 4B04PHY: CORE COURSE IV : ELECTRONICS I, Academic Year: 2022-2023, Semester: 4

Internal Assessment 1 (Test 1) - Evaluation Report

Note: MO - Marks obtained by the student in a specific CO, %- Percentage of marks in a specific CO

Sl. No.	Roll No.	KU ID	Student Name	04PHY-C0		04PHY-C1		04PHY-C2		04PHY-C3		04PHY-C4	
				MO	%	O	%	O	%	O	%	O	%
1	01/PHY/21	EK21CPHR01	Alan Francis	6	100	7	100	7	100				
2	02/PHY/21	EK21CPHR02	Aswin Kumar T S	3	50	6	86	5	71				
3	05/PHY/21	EK21CPHR04	Midhun Mohan	6	100	7	100	7	100				
4	06/PHY/21	EK21CPHR05	Muhammad Asif N M	2	33	6	86	5.5	79				
5	07/PHY/21	EK21CPHR06	Muhammad Sinan	6	100	7	100	7	100				
6	08/PHY/21	EK21CPHR07	Aishwarya Babu PV	2	33	3	43	2	29				
7	11/PHY/21	EK21CPHR09	Aswin M K	4	67	6	86	3	43				
8	12/PHY/21	EK21CPHR10	Devika K	6	100	7	100	7	100				
9	13/PHY/21	EK21CPHR11	Jesbin Biju	6	100	7	100	7	100				
10	15/PHY/21	EK21CPHR13	Sarangi P K	3	50	6	86	5	71				
Course Outcomes				04PHY-C0		04PHY-C1		04PHY-C2		04PHY-C3		04PHY-C4	
Threshold for Attainment Calculation (%Marks)				80		80		80		80		80	
Total Number of Students Attempted				10		10		10		0		0	
Number of Students Attained the Target				5		9		5		0		0	
% of Students Attained the Target				50.00		90.00		50.00					
Attainment Level				0		3		0					



Chithra M

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EKNM Government College Elerithattu

Course Outcome - Direct Attainment for 4B04PHY: CORE COURSE IV : ELECTRONICS I, Academic Year: 2022-2023, Semester: 4

Internal Assessment 2 (Test 2) - Evaluation Report

Note: MO - Marks obtained by the student in a specific CO, %- Percentage of marks in a specific CO

Sl. No.	Roll No.	KU ID	Student Name	04PHY-C01		04PHY-C02		04PHY-C03		04PHY-C04		04PHY-C05		04PHY-C06	
				MO	%	MO	%	MO	%	MO	%	MO	%	MO	%
1	01/PHY/21	EK21CPHR01	Alan Francis							4	67	5	71	5	71
2	02/PHY/21	EK21CPHR02	Aswin Kumar T S							4	67	6	86	3.5	50
3	05/PHY/21	EK21CPHR04	Midhun Mohan							6	100	7	100	7	100
4	06/PHY/21	EK21CPHR05	Muhammad Asif N M							5	83	4	57	5	71
5	07/PHY/21	EK21CPHR06	Muhammad Sinan							5	83	3	43	5	71
6	08/PHY/21	EK21CPHR07	Aishwarya Babu PV							3	50	6	86	4	57
7	11/PHY/21	EK21CPHR09	Aswin M K							3	50	4	57	6	86
8	12/PHY/21	EK21CPHR10	Devika K							6	100	7	100	7	100
9	13/PHY/21	EK21CPHR11	Jesbin Biju							4	67	4	57	5	71
10	15/PHY/21	EK21CPHR13	Sarangi P K							6	100	7	100	7	100
Course Outcomes				04PHY-C01		04PHY-C02		04PHY-C03		04PHY-C04		04PHY-C05		04PHY-C06	
Threshold for Attainment Calculation (%Marks)				80		80		80		80		80		80	
Total Number of Students Attempted				0		0		0		10		10		10	
Number of Students Attained the Target				0		0		0		5		5		4	
% of Students Attained the Target										50.00		50.00		40.00	
Attainment Level										0		0		0	



Chithra M

Guest Lecturer, PHYSICS

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Course Outcome - Direct Attainment for 4B04PHY: CORE COURSE IV : ELECTRONICS I, Academic Year: 2022-2023, Semester: 4

Internal Assessment 3 (Assignment 1) - Evaluation Report

Note: MO - Marks obtained by the student in a specific CO, %- Percentage of marks in a specific CO

Sl. No.	Roll No.	KU ID	Student Name	04PHY-C01		04PHY-C02		04PHY-C03		04PHY-C04		04PHY-C05		04PHY-C06	
				MO	%	MO	%	MO	%	MO	%	MO	%	MO	%
1	01/PHY/21	EK21CPHR01	Alan Francis	2	100	2	100	2	100	2	100	1	100	1	100
2	02/PHY/21	EK21CPHR02	Aswin Kumar T S	0	0	1	50	2	100	1	50	0	0	1	100
3	05/PHY/21	EK21CPHR04	Midhun Mohan	2	100	2	100	2	100	2	100	1	100	1	100
4	06/PHY/21	EK21CPHR05	Muhammad Asif N M	2	100	2	100	2	100	2	100	1	100	1	100
5	07/PHY/21	EK21CPHR06	Muhammad Sinan	1	50	0	0	2	100	1	50	0	0	1	100
6	08/PHY/21	EK21CPHR07	Aishwarya Babu PV	1	50	1	50	0	0	1	50	1	100	1	100
7	11/PHY/21	EK21CPHR09	Aswin M K	2	100	0	0	0	0	2	100	1	100	0	0
8	12/PHY/21	EK21CPHR10	Devika K	2	100	2	100	2	100	2	100	1	100	1	100
9	13/PHY/21	EK21CPHR11	Jesbin Biju	2	100	2	100	2	100	2	100	1	100	1	100
10	15/PHY/21	EK21CPHR13	Sarangi P K	1	50	0	0	2	100	0	0	1	100	1	100
Course Outcomes				04PHY-C01		04PHY-C02		04PHY-C03		04PHY-C04		04PHY-C05		04PHY-C06	
Threshold for Attainment Calculation (%Marks)				80		80		80		80		80		80	
Total Number of Students Attempted				10		10		10		10		10		10	
Number of Students Attained the Target				6		5		8		6		8		9	
% of Students Attained the Target				60.00		50.00		80.00		60.00		80.00		90.00	
Attainment Level				1		0		3		1		3		3	



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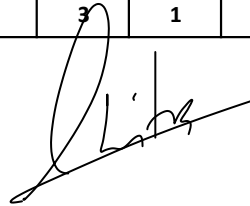
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Course Outcome - Direct Attainment for 4B04PHY: CORE COURSE IV : ELECTRONICS I, Academic Year:
2022-2023, Semester: 4

Internal Assessment 4 (Viva) - Evaluation Report

Note: MO - Marks obtained by the student in a specific CO, %- Percentage of marks in a specific CO

Sl. No.	Roll No.	KU ID	Student Name	04PHY-C01		04PHY-C02		04PHY-C03		04PHY-C04		04PHY-C05		04PHY-C06	
				MO	%	MO	%	MO	%	MO	%	MO	%	MO	%
1	01/PHY/21	EK21CPHR01	Alan Francis	1	100	1	100	0	0	0	0	1	50	2	100
2	02/PHY/21	EK21CPHR02	Aswin Kumar T S	1	100	1	100	2	100	2	100	2	100	2	100
3	05/PHY/21	EK21CPHR04	Midhun Mohan	1	100	1	100	2	100	2	100	2	100	2	100
4	06/PHY/21	EK21CPHR05	Muhammad Asif N M	1	100	0	0	1	50	1	50	1	50	1	50
5	07/PHY/21	EK21CPHR06	Muhammad Sinan	0	0	0	0	2	100	0	0	1	50	2	100
6	08/PHY/21	EK21CPHR07	Aishwarya Babu PV	1	100	1	100	2	100	2	100	2	100	2	100
7	11/PHY/21	EK21CPHR09	Aswin M K	1	100	0	0	1	50	0	0	1	50	2	100
8	12/PHY/21	EK21CPHR10	Devika K	1	100	1	100	2	100	2	100	2	100	2	100
9	13/PHY/21	EK21CPHR11	Jesbin Biju	1	100	0	0	1	50	1	50	1	50	1	50
10	15/PHY/21	EK21CPHR13	Sarangi P K	1	100	1	100	2	100	2	100	2	100	2	100
Course Outcomes				04PHY-C01		04PHY-C02		04PHY-C03		04PHY-C04		04PHY-C05		04PHY-C06	
Threshold for Attainment Calculation (%Marks)				80		80		80		80		80		80	
Total Number of Students Attempted				10		10		10		10		10		10	
Number of Students Attained the Target				9		6		6		5		5		8	
% of Students Attained the Target				90.00		60.00		60.00		50.00		50.00		80.00	
Attainment Level				3		1		1		0		0		3	



Chithra M

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Course Outcome - Indirect Attainment for 4B04PHY: CORE COURSE IV :
ELECTRONICS I, Academic Year: 2022-2023, Semester: 4

Indirect Assessment - Course Exit Survey

Sl. No.	Student Name	CES	CES	CES	CES	CES	CES	Indirect Assessment - Course Exit Survey			
		Q1	Q2	Q3	Q4	Q5	Q6	CO	No. of Questions	% Students CO Attainment	Survey Wise Attainment Level
		5	5	5	5	5	5				
		CO1	CO2	CO3	CO4	CO5	CO6				
1	Student 1	4	4	3	4	4	2				
2	Student 2	5	5	5	5	5	5	4B04PHY- CO1	1	50.00	0
3	Student 3	3	4	5	3	5	2	4B04PHY- CO2	1	50.00	0
4	Student 4	4	3	2	1	4	3	4B04PHY- CO3	1	20.00	0
5	Student 5	4	4	3	2	3	4	4B04PHY- CO4	1	50.00	0
6	Student 6	3	3	3	4	3	4	4B04PHY- CO5	1	50.00	0
7	Student 7	4	5	3	5	4	5	4B04PHY- CO6	1	50.00	0
8	Student 8	2	2	2	4	2	4				
9	Student 9	2	3	3	3	3	3				
10	Student 10	1	1	2	2	1	2				

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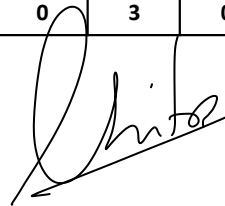
EKNM Government College Elerithattu

Course Outcome - Direct Attainment for 4B04PHY: CORE COURSE IV : ELECTRONICS I, Academic Year: 2022-2023, Semester: 4

Internal Assessment 1 (Test 1) - Evaluation Report

Note: MO - Marks obtained by the student in a specific CO, %- Percentage of marks in a specific CO

Sl. No.	Roll No.	KU ID	Student Name	04PHY-C01		04PHY-C02		04PHY-C03		04PHY-C04		04PHY-C05		04PHY-C06	
				MO	%	O	%	O	%	O	%	O	%	O	%
1	01/PHY/21	EK21CPHR01	Alan Francis	6	100	7	100	7	100						
2	02/PHY/21	EK21CPHR02	Aswin Kumar T S	3	50	6	86	5	71						
3	05/PHY/21	EK21CPHR04	Midhun Mohan	6	100	7	100	7	100						
4	06/PHY/21	EK21CPHR05	Muhammad Asif N M	2	33	6	86	5.5	79						
5	07/PHY/21	EK21CPHR06	Muhammad Sinan	6	100	7	100	7	100						
6	08/PHY/21	EK21CPHR07	Aishwarya Babu PV	2	33	3	43	2	29						
7	11/PHY/21	EK21CPHR09	Aswin M K	4	67	6	86	3	43						
8	12/PHY/21	EK21CPHR10	Devika K	6	100	7	100	7	100						
9	13/PHY/21	EK21CPHR11	Jesbin Biju	6	100	7	100	7	100						
10	15/PHY/21	EK21CPHR13	Sarangi P K	3	50	6	86	5	71						
Course Outcomes				04PHY-C01		04PHY-C02		04PHY-C03		04PHY-C04		04PHY-C05		04PHY-C06	
Threshold for Attainment Calculation (%Marks)				80		80		80		80		80		80	
Total Number of Students Attempted				10		10		10		0		0		0	
Number of Students Attained the Target				5		9		5		0		0		0	
% of Students Attained the Target				50.00		90.00		50.00							
Attainment Level				0		3		0							



Chithra M

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Course Outcome - Direct Attainment for 4B04PHY: CORE COURSE IV : ELECTRONICS I, Academic Year:
2022-2023, Semester: 4

Internal Assessment 2 (Test 2) - Evaluation Report

Note: MO - Marks obtained by the student in a specific CO, %- Percentage of marks in a specific CO

Sl. No.	Roll No.	KU ID	Student Name	04PHY-C0		04PHY-C1		04PHY-C2		04PHY-C3		04PHY-C4	
				MO	%	MO	%	MO	%	MO	%	MO	%
1	01/PHY/21	EK21CPHR01	Alan Francis					4	67	5	71	5	71
2	02/PHY/21	EK21CPHR02	Aswin Kumar T S					4	67	6	86	3.5	50
3	05/PHY/21	EK21CPHR04	Midhun Mohan					6	100	7	100	7	100
4	06/PHY/21	EK21CPHR05	Muhammad Asif N M					5	83	4	57	5	71
5	07/PHY/21	EK21CPHR06	Muhammad Sinan					5	83	3	43	5	71
6	08/PHY/21	EK21CPHR07	Aishwarya Babu PV					3	50	6	86	4	57
7	11/PHY/21	EK21CPHR09	Aswin M K					3	50	4	57	6	86
8	12/PHY/21	EK21CPHR10	Devika K					6	100	7	100	7	100
9	13/PHY/21	EK21CPHR11	Jesbin Biju					4	67	4	57	5	71
10	15/PHY/21	EK21CPHR13	Sarangi P K					6	100	7	100	7	100
Course Outcomes				04PHY-C0		04PHY-C1		04PHY-C2		04PHY-C3		04PHY-C4	
Threshold for Attainment Calculation (%Marks)				80		80		80		80		80	
Total Number of Students Attempted				0		0		0		10		10	
Number of Students Attained the Target				0		0		0		5		4	
% of Students Attained the Target										50.00		50.00	
Attainment Level										0		0	



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Course Outcome - Direct Attainment for 4B04PHY: CORE COURSE IV : ELECTRONICS I, Academic Year: 2022-2023, Semester: 4

Internal Assessment 3 (Assignment 1) - Evaluation Report

Note: MO - Marks obtained by the student in a specific CO, %- Percentage of marks in a specific CO

Sl. No.	Roll No.	KU ID	Student Name	04PHY-C01		04PHY-C02		04PHY-C03		04PHY-C04		04PHY-C05		04PHY-C06	
				MO	%	MO	%	MO	%	MO	%	MO	%	MO	%
1	01/PHY/21	EK21CPHR01	Alan Francis	2	100	2	100	2	100	2	100	1	100	1	100
2	02/PHY/21	EK21CPHR02	Aswin Kumar T S	0	0	1	50	2	100	1	50	0	0	1	100
3	05/PHY/21	EK21CPHR04	Midhun Mohan	2	100	2	100	2	100	2	100	1	100	1	100
4	06/PHY/21	EK21CPHR05	Muhammad Asif N M	2	100	2	100	2	100	2	100	1	100	1	100
5	07/PHY/21	EK21CPHR06	Muhammad Sinan	1	50	0	0	2	100	1	50	0	0	1	100
6	08/PHY/21	EK21CPHR07	Aishwarya Babu PV	1	50	1	50	0	0	1	50	1	100	1	100
7	11/PHY/21	EK21CPHR09	Aswin M K	2	100	0	0	0	0	2	100	1	100	0	0
8	12/PHY/21	EK21CPHR10	Devika K	2	100	2	100	2	100	2	100	1	100	1	100
9	13/PHY/21	EK21CPHR11	Jesbin Biju	2	100	2	100	2	100	2	100	1	100	1	100
10	15/PHY/21	EK21CPHR13	Sarangi P K	1	50	0	0	2	100	0	0	1	100	1	100
Course Outcomes				04PHY-C01		04PHY-C02		04PHY-C03		04PHY-C04		04PHY-C05		04PHY-C06	
Threshold for Attainment Calculation (%Marks)				80		80		80		80		80		80	
Total Number of Students Attempted				10		10		10		10		10		10	
Number of Students Attained the Target				6		5		8		6		8		9	
% of Students Attained the Target				60.00		50.00		80.00		60.00		80.00		90.00	
Attainment Level				1		0		3		1		3		3	



Chithra M

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Course Outcome - Direct Attainment for 4B04PHY: CORE COURSE IV : ELECTRONICS I, Academic Year:
2022-2023, Semester: 4

Internal Assessment 4 (Viva) - Evaluation Report

Note: MO - Marks obtained by the student in a specific CO, %- Percentage of marks in a specific CO

Sl. No.	Roll No.	KU ID	Student Name	04PHY-C01		04PHY-C02		04PHY-C03		04PHY-C04		04PHY-C05		04PHY-C06	
				MO	%	MO	%	MO	%	MO	%	MO	%	MO	%
1	01/PHY/21	EK21CPHR01	Alan Francis	1	100	1	100	0	0	0	0	1	50	2	100
2	02/PHY/21	EK21CPHR02	Aswin Kumar T S	1	100	1	100	2	100	2	100	2	100	2	100
3	05/PHY/21	EK21CPHR04	Midhun Mohan	1	100	1	100	2	100	2	100	2	100	2	100
4	06/PHY/21	EK21CPHR05	Muhammad Asif N M	1	100	0	0	1	50	1	50	1	50	1	50
5	07/PHY/21	EK21CPHR06	Muhammad Sinan	0	0	0	0	2	100	0	0	1	50	2	100
6	08/PHY/21	EK21CPHR07	Aishwarya Babu PV	1	100	1	100	2	100	2	100	2	100	2	100
7	11/PHY/21	EK21CPHR09	Aswin M K	1	100	0	0	1	50	0	0	1	50	2	100
8	12/PHY/21	EK21CPHR10	Devika K	1	100	1	100	2	100	2	100	2	100	2	100
9	13/PHY/21	EK21CPHR11	Jesbin Biju	1	100	0	0	1	50	1	50	1	50	1	50
10	15/PHY/21	EK21CPHR13	Sarangi P K	1	100	1	100	2	100	2	100	2	100	2	100
Course Outcomes				04PHY-C01		04PHY-C02		04PHY-C03		04PHY-C04		04PHY-C05		04PHY-C06	
Threshold for Attainment Calculation (%Marks)				80		80		80		80		80		80	
Total Number of Students Attempted				10		10		10		10		10		10	
Number of Students Attained the Target				9		6		6		5		5		8	
% of Students Attained the Target				90.00		60.00		60.00		50.00		50.00		80.00	
Attainment Level				3		1		1		0		0		3	



Chithra M

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Course Outcome - Direct Attainment for 4B04PHY: CORE COURSE IV : ELECTRONICS I, Academic Year: 2022-2023, Semester: 4

Student Wise Direct Attainment

Note: MO - Marks obtained by the student in a specific CO, %- Percentage of marks in a specific CO, T-Total marks attempted from the CO

Sl. No.	Roll No.	KU ID	Student Name	4B04PHY-Co.1				4B04PHY-Co.2				4B04PHY-Co.3				4B04PHY-Co.4				4B04PHY-Co.5				4B04PHY-Co.6			
				T	MO	%	Level	T	MO	%	Level	T	MO	%	Level	T	MO	%	Level	T	MO	%	Level	T	MO	%	Level
1	01/PHY/21	EK21CPHR01	Alan Francis	9	9	100	3	10	10	100	3	11	9	82	3	10	6	60	2	10	7	70	2	10	8	80	3
2	02/PHY/21	EK21CPHR02	Aswin Kumar T S	9	4	45	1	10	8	80	3	11	9	82	3	10	7	70	2	10	8	80	3	10	6.5	65	2
3	05/PHY/21	EK21CPHR04	Midhun Mohan	9	9	100	3	10	10	100	3	11	11	100	3	10	10	100	3	10	10	100	3	10	10	100	3
4	06/PHY/21	EK21CPHR05	Muhammad Asif N M	9	5	56	1	10	8	80	3	11	8.5	78	2	10	8	80	3	10	6	60	2	10	7	70	2
5	07/PHY/21	EK21CPHR06	Muhammad Sinan	9	7	78	2	10	7	70	2	11	11	100	3	10	6	60	2	10	4	40	1	10	8	80	3
6	08/PHY/21	EK21CPHR07	Aishwarya Babu PV	9	4	45	1	10	5	50	1	11	4	37	0	10	6	60	2	10	9	90	3	10	7	70	2
7	11/PHY/21	EK21CPHR09	Aswin M K	9	7	78	2	10	6	60	2	11	4	37	0	10	5	50	1	10	6	60	2	10	8	80	3
8	12/PHY/21	EK21CPHR10	Devika K	9	9	100	3	10	10	100	3	11	11	100	3	10	10	100	3	10	10	100	3	10	10	100	3
9	13/PHY/21	EK21CPHR11	Jesbin Biju	9	9	100	3	10	9	90	3	11	10	91	3	10	7	70	2	10	6	60	2	10	7	70	2
10	15/PHY/21	EK21CPHR13	Sarangi P K	9	5	56	1	10	7	70	2	11	9	82	3	10	8	80	3	10	10	100	3	10	10	100	3

Student Wise Attainment Levels Thresholds (% of Marks):

4B04PHY-Co.1				4B04PHY-Co.2				4B04PHY-Co.3				4B04PHY-Co.4				4B04PHY-Co.5				4B04PHY-Co.6							
Level 3	Level 2	Level 1		Level 3	Level 2	Level 1		Level 3	Level 2	Level 1		Level 3	Level 2	Level 1		Level 3	Level 2	Level 1		Level 3	Level 2	Level 1		Level 3	Level 2	Level 1	
80	60	40		80	60	40		80	60	40		80	60	40		80	60	40		80	60	40		80	60	40	



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Course Outcome - Indirect Attainment for 4B04PHY: CORE COURSE IV :
ELECTRONICS I, Academic Year: 2022-2023, Semester: 4

Indirect Assessment (Course Exit Survey) - Evaluation Report

Note: MA- Marks Allotted by the student in a specific CO, %- Percentage of Marks in a specific CO

Sl. No.	Student Name	CO1		CO2		CO3		CO4		CO5		CO6	
		MA	%	MA	%	MA	%	MA	%	MA	%	MA	%
1	Student 1	4	80	4	80	3	60	4	80	4	80	2	40
2	Student 2	5	100	5	100	5	100	5	100	5	100	5	100
3	Student 3	3	60	4	80	5	100	3	60	5	100	2	40
4	Student 4	4	80	3	60	2	40	1	20	4	80	3	60
5	Student 5	4	80	4	80	3	60	2	40	3	60	4	80
6	Student 6	3	60	3	60	3	60	4	80	3	60	4	80
7	Student 7	4	80	5	100	3	60	5	100	4	80	5	100
8	Student 8	2	40	2	40	2	40	4	80	2	40	4	80
9	Student 9	2	40	3	60	3	60	3	60	3	60	3	60
10	Student 10	1	20	1	20	2	40	2	40	1	20	2	40
Course Outcomes		CO1		CO2		CO3		CO4		CO5		CO6	
Threshold for Attainment Calculation (%Marks)		80		80		80		80		80		80	
Total Number of Students Attempted		10		10		10		10		10		10	
Number of Students Allotted the Target		5		5		2		5		5		5	
% of Students Allotted the Target		50.00		50.00		20.00		50.00		50.00		50.00	
Attainment Level		0		0		0		0		0		0	



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CO Wise Average Attainment												
Course Outcomes	Internal Attainment - Individual				Overall Internal Attainment (%)	Final/ University Attainment (%)	Overall Direct CO Attainment		Indirect CO Attainment		Overall CO Attainment Level	
	Test 1	Test 2	Assignment 1	Viva			(%)	Level	(%)	Level		
	(%)	(%)	(%)	(%)			(%)	(%)	(%)	(%)		
4B04PHY-Co.1	50.00		60.00	90.00	###	45.00	40.00	41.00	0.00	50.00	0	0.00
4B04PHY-Co.2	90.00		50.00	60.00	###	49.00	40.00	41.80	0.00	50.00	0	0.00
4B04PHY-Co.3	50.00		80.00	60.00	###	43.00	40.00	40.60	0.00	20.00	0	0.00
4B04PHY-Co.4		50.00	60.00	50.00	###	37.00	40.00	39.40	0.00	50.00	0	0.00
4B04PHY-Co.5		50.00	80.00	50.00	###	41.00	40.00	40.20	0.00	50.00	0	0.00
4B04PHY-Co.6		40.00	90.00	80.00	###	46.00	40.00	41.20	0.00	50.00	0	0.00
Average Attainment:								0.00		0.00		0.00

Course Attainment Level: 0

Calculation

Overall Internal Attainment % = 0.15 * Test 1 Attainment % + 0.15 * Test 2 Attainment % + 0.2 * Assignment 1 Attainment % + 0.2 * Viva Attainment %

Overall Direct CO Attainment % = 0.2 * Overall Internal Attainment % + 0.8 * Final/ University Attainment %

Overall CO Attainment = 0.9 * Overall Direct CO Attainment Level + 0.1 * Indirect CO Attainment Level

% Marks Targets for Attainment Calculation							% Students Thresholds for Assessing Attainment Levels			
CO	804PHY-Co	804PHY-Co	804PHY-Co	804PHY-Co	804PHY-Co.5	804PHY-Co.6	Final/ University	Level 3	Level 2	Level 1
Direct	80	80	80	80	80	80	65	80	70	60
Indirect	80	80	80	80	80	80				

Overall Internal Attainment Targets (% Students)

804PHY-Co	804PHY-Co	804PHY-Co.3	804PHY-Co.4	804PHY-Co.5	804PHY-Co.6
70	70	70	70	70	70

Module Co-ordinator

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Course Outcomes, Course Exit Survey Questions, Assessment Tools
4B04PHY: CORE COURSE IV : ELECTRONICS I, Academic Year: 2022-2023, Semester: 4

Course Outcomes
4B04PHY-Co.1: Understand the basics of PN junction diode, Zener diode and their applications.
4B04PHY-Co.2: Understand the structure, operations and characteristics of BJT and FET.
4B04PHY-Co.3: Understand the biasing methods and design of BJT and FET circuits.
4B04PHY-Co.4: Understand the different number systems, conversions and binary arithmetic operations.
4B04PHY-Co.5: Understand the basic combinational logic gates.
#REF!

Course Exit Survey Questions
4B04PHY-Co.1: How do you rate your confidence level to explain the difference between pn junction diode and zener diode? - (a) Excellent (b) Very Good (c) Good (d) Fair (e) Poor
4B04PHY-Co.2: How do you rate your ability to explain structure, operations and characteristics of BJT and FET? - (a) Excellent (b) Very Good (c) Good (d) Fair (e) Poor
4B04PHY-Co.3: How confident you are to explain the biasing methods of BJT and FET? - (a) Excellent (b) Very Good (c) Good (d) Fair (e) Poor
4B04PHY-Co.4: How is your knowledge on different number systems, conversions and binary arithmetic operations? - (a) Excellent (b) Very Good (c) Good (d) Fair (e) Poor
4B04PHY-Co.5: How well do you know the basic combinational logic gates? - (a) Excellent (b) Very Good (c) Good (d) Fair (e) Poor
#REF!

Assessment Tools for Assessing Course Outcomes (COs) and Program Outcomes (POs)/Program Specific Outcomes (PSOs)			
Assessment Method	Assessment Tools	Purpose	Remarks
Direct Assessment (Mark based Assessments)	Test 1	CO - Direct Internal Attainment	# CO-Direct Attainment is computed using CO-Direct Internal Attainment and End Semester Exam Attainment. # CO-Attainment is computed using CO-Direct Attainment and CO-Indirect Attainment (Course Exit Survey). # PO/PSO - Direct Attainment is computed using CO-Attainment and CO-PO/PSO Mapping # PO/PSO Attainment is computed using PO/PSO Direct Attainment and PO/PSO Indirect Attainment
	Test 2		
	Assignment 1		
	Viva		
Indirect Assessment (Survey based Assessments)	End Semester Exam	CO - Direct Attainment	
	Course Exit Survey	CO - Indirect Attainment	
	Program Exit Survey	PO/PSO - Indirect Attainment	

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