GokarajuRangaraju Institute of EngineeringandTechnology
(Autonomous)
Bachupally, Kukatpally, Hyderabad– 500 090,A.P., India. (040)66864440

COURSEOBJECTIVES

Academic Year **:**2022-2023

Semester **:** I

Name of the Program: B.Tech EEE. **Year: II** **Section: A**

Course/Subject: PRINCIPLES OF ANALOG ELECTRONICS LAB Course code:GR20A2029

Name of the Faculty : U.Vijayalakshmi, M.Prasanth(Asst.Prof). **Dept.: EEE.**

On completion of this Subject/Course the student shall be able:

S.No	Objectives
1	Classify the types of active components.
2	Describe the operations of Diode, BJT and MOSFET
3	Analyse different Configuration types of Operational Amplifier.
4	Implement the mathematical operation on signals.
5	Make conversant with Digital to Analog and Analog to Digital Converters

Signature of HOD

Date:

Signature of faculty

Date:

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COURSE OUTCOMES

Academic Year **:**2022-2023

Semester **:** I

Name of the Program: B.Tech EEE. **Year: II** **Section: A**

Course/Subject: PRINCIPLES OF ANALOG ELECTRONICS LAB Course code:GR20A2029

Name of the Faculty: U.Vijayalakshmi, M.Prasanth(Asst.Prof). **Dept.: EEE.**

The expected out comes of the Course/Subject are:

S.No	Outcomes
1	. Recall types of active components
2	Draw characteristics of Diode, BJT and MOSFET
3	Design Operational Amplifiers as inverting and non-inverting amplifier
4	Apply mathematical operation on signals using Operational Amplifier
5	Explain operation of Analog to Digital Conversion (ADC) and Digital to Analog Conversion (DAC)

Signature of HOD

Date:

Signature of faculty

Date:

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GUIDELINESTOSTUDY THE COURSE/SUBJECT

Academic Year : 2022-2023

Semester : I

Name of the Program: B.Tech …… Year: ……II……Section: A/B

Course/Subject: PRINCIPLES OF ANALOG ELECTRONICS LAB Course Code: … GR20A2029

Name of the Faculty**: U.Vijayalakshmi, M.Prasanth(Asst.Prof) Dept.: EEE.**

Guidelines to study the Course/ Subject: … PRINCIPLES OF ANALOG ELECTRONICS LAB……..

Course Design and Delivery System(CDD):

The Course syllabus is written into number of learning objectives and outcomes.
These learning objectives and outcomes will be achieved through lectures, assessments, assignments, experiments in the laboratory, projects, seminars, presentations, etc.
Every student will be given an assessment plan, criteria for assessment, scheme of evaluation and grading method.
The Learning Process will be carried out through assessments of Knowledge, Skills and Attitude by various methods and the students will be given guidance to refer to the textbooks, reference books, journals, etc.

The faculty be able to –

Understand the principles of Learning

Understand the psychology of students

Develop instructional objectives for a given topic

Prepare course, unit and lesson plans

Understand different methods of teaching and learning

Use appropriate teaching and learning aids

Plan and deliver lectures effectively
Provide feedback to students using various methods of Assessments and tools of Evaluation
Act as a guide, advisor, counselor, facilitator, motivator and not just as a teacher alone

Signature of HOD

Date:

Signature of faculty Date:

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COURSE SCHEDULE

Academic Year **:**2022-2023

Semester **:** I

Name of the Program: B.Tech EEE. **Year: II** **Section: A**

Course/Subject: PRINCIPLES OF ANALOG ELECTRONICS LAB Course code:GR20A2029

Name of the Faculty : U.Vijayalakshmi, M.Prasanth(Asst.Prof). **Dept.: EEE.**

The Schedule for the whole Course/ Subject is:

S. No.	Description	Total No. Of Periods
1.	Obtain characteristics of PN junction Diode i) Forward biased ii) Reverse Biased.	3
2.	Design half wave rectifier circuit using diodes and draw Input and output graphs.	3
3.	Design Clippers and Clampers using Diode	3
4.	Obtain input and output characteristics of CE Configuration of BJT	3
5.	Obtain input and output characteristics of CB Configuration of BJT	3
6.	Obtain drain current characteristics for MOSFET	3
7.	Design and implement Operational Amplifier as Inverting,	3
8.	Design and implement Operational Amplifier as Non-Inverting Amplifier	3
9.	Design and implement Subtractor	6
10.	Design and implement Operational Amplifier as an Integrator	6

11.	Design and implement Operational Amplifier as a Differentiator	6
12.	Design and implement a precision rectifier using Operational Amplifier	6
13.	Execute Analog to Digital Converters	6
14.	Execute Digital to Analog Converters	6

Total No. of Instructional periods available for the course:….60…. Periods

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Academic Year **:**2022-2023

Semester **:** I

Name of the Program: B.Tech EEE. **Year: II** **Section: A**

Course/Subject: PRINCIPLES OF ANALOG ELECTRONICS LAB Course code:GR20A2029

Name of the FacultyU.Vijayalakshmi, M.Prasanth(Asst.Prof). **Dept.: EEE.**

S. No.	Description	Total No. Of Periods
1.	Obtain characteristics of PN junction Diode i) Forward biased ii) Reverse Biased.	3
2.	Design half wave rectifier circuit using diodes and draw Input and output graphs.	3
3.	Design Clippers and Clampers using Diode	3
4.	Obtain input and output characteristics of CE Configuration of BJT	3
5.	Obtain input and output characteristics of CB Configuration of BJT	3
6.	Obtain drain current characteristics for MOSFET	3
7.	Design and implement Operational Amplifier as Inverting,	3
8.	Design and implement Operational Amplifier as Non-Inverting Amplifier	3
9.	Design and implement Subtractor	3
10.	Design and implement Operational Amplifier as an Integrator	3

11.	Design and implement Operational Amplifier as a Differentiator	6
12.	Design and implement a precision rectifier using Operational Amplifier	6
13.	Execute Analog to Digital Converters	6
14.	Execute Digital to Analog Converters	6

Total No. of Instructional periods available for the course:…60…. Periods

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ILLUSTRATIVE VERBS FORSTATING INSTRUCTIONAL OBJECTIVES

TheseverbscanalsobeusedwhileframingquestionsforContinuousAssessmentExaminationsaswellasforEnd–Semester (final)Examinations

ILLUSTRATIVEVERBSFOR STATING GENERALOBJECTIVES/OUTCOMES

Know Comprehend	Understand Apply	Analyze Design	Generate Evaluate

ILLUSTRATIVEVERBSFOR STATING SPECIFIC OBJECTIVES/OUTCOMES:

A. COGNITIVEDOMAIN (KNOWLEDGE)

1	2	3	4	5	6
Knowledge	Comprehension Understanding	Application of knowledge& comprehension	Analysis Of wholew.r.t.its constituents	Synthesis	Evaluation Judgment
Define	Convert	Change	Breakdown	Categorize	Appraise
Identify	Defend	Compute	Differentiate	Combine	Compare
Label	Describe (a	Demonstrate	Discriminate	Compose	Conclude
List	Procedure)	Deduce	Distinguish	Compose	Contrast
March	Distinguish	Manipulate	Separate	Create	Criticize
Reproduce	Estimate	Modify	Subdivide	Devise	Justify
Select	Explain why/how	Predict		Design	Interpret
State	Extend	Prepare		Generate	Support
	Generalize	Relate		Organize	
	Give examples	Show		Plan	
	Illustrate	Solve		Rearrange	
	Infer			Reconstruct	
	Summarize			Reorganize	
				Revise	

B. AFFECTIVEDOMAIN (ATTITUDE)		C. PSYCHOMOTOR DOMAIN (SKILLS)				
Adhere	Resolve	Bend	Dissect	Insert	Perform	Straighten
Assist	Select	Calibrate	Draw	Keep	Prepare	Strengthen
Attend	Serve	Compress	Extend	Elongate	Remove	Time Conduct
Change	Share	Feed	Limit	Replace	Transfer Connect	File
Develop		Manipulate	Report	Type Convert	Grow	Move
Help		Precisely	Reset	Weigh Decrease	Increase	Paint
Influence		Set				

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SCHEDULE OF INSTRUCTIONS COURSEPLAN

Academic Year **:**2022-2023

Semester **:** I

Name of the Program: B.Tech EEE. **Year: II** **Section: A**

Course/Subject: PRINCIPLES OF ANALOG ELECTRONICS LABCourse code:GR20A2029

Name of the Faculty: U.Vijayalakshmi, M.Prasanth(Asst.Prof). **Dept.: EEE.**

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Expt.No.	No. of Periods	Topics/Sub-Topics	Objectives &Outcomes Nos.	References (Text Book, Journal…) Page Nos.: to_____
1.	3	Obtain characteristics of PN junction Diode i) Forward biased ii) Reverse Biased.		Lab Manual
2.	3	Design half wave rectifier circuit using diodes and draw Input and output graphs.		Lab Manual
3.	3	Design Clippers and Clampers using Diode		Lab Manual
4.	3	Obtain input and output characteristics of CE Configuration of BJT		Lab Manual
5.	3	Obtain input and output characteristics of CB Configuration of BJT		Lab Manual
6.	3	Obtain drain current characteristics for MOSFET		Lab Manual
7.	3	Design and implement Operational Amplifier as Inverting,		Lab Manual

8.	3	Design and implement Operational Amplifier as Non-Inverting Amplifier		Lab Manual
9.	3	Design and implement Subtractor		Lab Manual
10.	3	Design and implement Operational Amplifier as an Integrator		Lab Manual
11.	6	Design and implement Operational Amplifier as a Differentiator		Lab Manual
12.	6	Design and implement a precision rectifier using Operational Amplifier		Lab Manual
13.	6	Execute Analog to Digital Converters		Lab Manual
14.	6	Execute Digital to Analog Converters		Lab Manual

Signature ofHOD

Date:

Signature offaculty

Date:

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COURSE COMPLETIONSTATUS

Academic Year :2022-2023

Semester : I

Name of the Program: B.Tech EEE. Year: II Section: A

Course/Subject: PRINCIPLES OF ANALOG ELECTRONICS LABCourse code:GR20A2029

Name of the Faculty: P.Srividya Devi,U.Vijayalakshmi,P.Sirisha(Asst.Prof). Dept.: EEE.

Actual Date of Completion& Remarks, if any

Experiment	Rema	No.of Objectives Achieved	No.of Outcomes Achieved
1	Obtain characteristics of PN junction Diode i) Forward		
2	Design half wave rectifier circuit using diodes and draw		
3	Design Clippers and Clampers using Diode		
4	Obtain input and output characteristics of CE		
5	Obtain input and output characteristics of CB		
6	Obtain drain current characteristics for MOSFET		
7	Design and implement Operational Amplifier as		
8	Design and implement Operational Amplifier as Non-		
9	Design and implement Subtractor		
10	Design and implement Operational Amplifier as an Integrator		
11	Design and implement Operational Amplifier as a Differentiator		
12	Design and implement a precision rectifier using Operational Amplifier		
13	Execute Analog to Digital Converters		
14	Execute Digital to Analog Converters		

Signature of HOD Signature of faculty

Date: Date:

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EVALUATIONSTRATEGY

Academic Year :2022-2023

Semester : I

Name of the Program: B.Tech EEE. **Year: II** **Section: A**

Course/Subject: PRINCIPLES OF ANALOG ELECTRONICS LAB Course code:GR20A2029

Name of the Faculty: U.Vijayalakshmi, M.Prasanth(Asst.Prof). **Dept.: EEE.**

1. TARGET:

A) Percentageforpass:**100%**

2. COURSEPLAN&CONTENT DELIVERY

(Please write how you intend to cover the contents: i.e., coverage of Units/Lessons by lectures, design, exercises, solving numerical problems, demonstration of models, model preparation, experiments in the Lab or by assignments, etc.)

3. METHOD OF EVALUATION

3.1 ☐ Daily Attendance

3.2 ☐ Lab Record and Observation

3.3 ☐ Projects

3.4 ☐Viva Voce

3.5 ☐ Internal Examination

4. List out any new topic(s)or any innovation you would like to introduce in teaching the subjects in this Semester.

Signature of HOD Signature of faculty

Date: Date:

TIME TABLES

DEPARTMENT OFELECTRICAL AND ELECTRONICS ENGINEERING

Gokaraju Rangaraju Institute of Engineering and Technology

Department of Electrical and Electronics Engineering

GRIET/PRIN/06/G/01/22-23 — **Wef : 10th Oct 2022**

BTech - EEE - A — **II Year - I Semester**

DAY/ HOUR	08:50 - 09:40	09:40 - 10:30	10:30 - 11:20	11:20 - 12:00	12:00 - 12:55	12:55 - 01:50	01:50 - 02:45
MONDAY	EMF		PAE	BREAK	PGT	VEGS	
TUESDAY	ECA		PGT		DCMT Lab/PAE Lab (A1/A2)		
WEDNESDAY	ECA	DCMT			PAE		EMF
THURSDAY	EMF	DCMT			DCMT Lab/PAE Lab (A2/A1)		
FRIDAY	PAE	ECA			EMF	PGT	
SATURDAY	CI		PGT		PAE	JPE	

ROOM NO	
Theory/Tutorial	4401
Lab	PAE Lab-4505 DCMT Lab-2106/07
Class Incharge:	D. Karuna Kumar

Subject Code	Subject Name	Faculty Code	Faculty Name
GR20A2023	Electrical Circuit Analysis	GSR	G. Sandhya Rani
GR20A2024	Principles of Analog Electronics	PRK	P. Ravikanth
GR20A2025	DC Machines and Transformers	Dr PBB	Dr B. Phaneendra Babu
GR20A2026	Electromagnetic Fields	Dr TSK	Dr. T. Suresh Kumar
GR20A2033	Power Generation and Transmission	VVRR	V. Vijayarama Raju
GR20A2028	Java Programming for Engineers	DP	D. Preethi
GR20A2029	Principles of Analog Electronics Lab	UVL/MP	U. Vijaya Lakshmi/ M. Prashanth
GR20A2030	DC Machines and Transformers Lab	VVRR/MRE	V. Vijayarama Raju/ M. Rekha
GR20A2003	Constitution of India (CI)	DKK	D. Karuna Kumar
GR20A2002	Value Ethics and Gender Culture	MP	M. Prashanth

Almanac	
1st Spell of Instructions	10/10/2022 to 07/12/2022
1st Mid-term Examinations	08/12/2022 to 12/12/2022
2nd Spell of Instructions	13/12/2022 to 07/02/2023
2nd Mid-term Examinations	08/02/2023 to 10/02/2023
Preparation	11/02/2023 to 17/02/2023
End Semester Examinations (Theory/ Practicals) Regular / Supplementary	20/02/2023 to 11/03/2023
Commencement of Second Semester, A.Y 2021-22	13/03/2023

Time Table Coordinator **HOD** **DAA**

Gokaraju Rangaraju Institute of Engineering & Technology

II B.Tech I Sem (EEE) Result Analysis

Academic Year: 2022-23 Total No. of Students Registered: 69

Course	Total No. of Students appeared	Total No. of Students Passed	No. of Students Failed	Count of Students with Grade Point					
				GP (10)	GP (9)	GP (8)	GP (7)	GP (6)	GP (5)
VEGC	69	67	02	20	33	09	03	01	01
CI	69	67	02	14	22	19	09	02	01
ECA	69	50	19	00	03	04	14	17	12
PAE	69	66	03	01	14	24	13	10	04
DCMT	69	57	12	00	00	06	15	20	16
EMF	69	57	12	00	02	11	19	18	07
JPE	69	66	03	00	05	23	22	11	05
PAE Lab	69	65	04	16	09	15	13	07	05
DCMT Lab	69	60	09	06	09	08	08	18	11
PGT	69	65	04	00	02	15	30	13	05

Arrears Position – II year / I Semester

No.of students	All Pass	One Arrear	Two Arrears	Three Arrears	More than three arrears	Overall % of pass
69	46	07	07	04	05	66.67%

Performance overall Class Three Toppers

ROLL NO.	NAME	SGPA
21241A0257	Siripuram Manisree	8.93
22245A0202	Divya Namani	8.50
21241A0245	Palleti Sri Padma Latha Reddy	8.40

Class coordinator **HOD, EEE**

II B.Tech - I Sem (EEE)

SECTION	Courses	VEGC	CI	ECA	PAE	DCMT	EMF	JPE	PAE LAB	DCMT LAB	PGT
	Course codes	GR20A2002	GR20A2003	GR20A2023	GR20A2024	GR20A2025	GR20A2026	GR20A2028	GR20A2029	GR20A2030	GR20A2033
A	TOTAL	69	69	69	69	69	69	69	69	69	69
	PASS	67	67	50	66	57	57	66	65	60	65
	PASS(%)	97.1	97.10	72.46	95.65	82.60	82.60	95.65	94.20	86.95	94.20
	FACULTY NAME	M. Prashanth	D. Karuna Kumar	G Sandhya Rani	P Ravi Kanth	Dr B Phaneendra Babu	Dr T Suresh Kumar	D. Preethi	U. Vijaya Lakshmi/ M. Prashanth	V. Vijayarama Raju/ M. Rekha	V. Vijayarama Raju
	FACULTY ID	1279	760	888	1178	1563	1494		692/1279	361/933	361

Class coordinator **HOD, EEE**

Gokaraju Rangaraju Institute of Engineering and Technology

(Autonomous)

Bachupally, Kukatpally, Hyderabad – 500 090

Direct Internal CO Attainments

Academic Year	2022 - 23	Department	EEE	Name of the Programme	B.Tech	Section	A
Year - Semester	II - I	Course Name :	PRINCIPLES OF ANALOG ELECTRONICS LAB	Course Code	GR20A2029		

	Lab Internal Examination																Record		Assessment
	Q.No 1	Q.No 2	Q.No 3	Q.No 4	Q.No 5	Q.No 6	Q.No 7	Q.No 8	Q.No 9	Q.No 10	Q.No 11	Q.No 12	Q.No 13	Q.No 14	Q.No 15	Viva	Iteration 1	Iteration 2	Marks
Enter CO Number → 1,2,3,4,5	1	1	2	2	3	3	4	4	5	5	1	2				1,2,3,4,5	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5
Marks →	10	10	10	10	10	10	10	10	10	10	10	10				10	5	5	5
S.No/Roll No.	Note : Enter Marks Between Two Green rows. Another Note : Additional Columns if Required should be inserted after column H and appropriately rename the Q. Nos.																		
21241A0201												10				9	5	5	5
21241A0202											9					7	5	5	5
21241A0203	6															8	5	5	5
21241A0204												10				8	5	5	5
21241A0205	6															7	5	5	5
21241A0206	6															7	5	5	5
21241A0207										10						8	5	5	5
21241A0208				7												6	5	5	5
21241A0209							8									7	5	5	5
21241A0210	0															4	5	5	5
21241A0211				7												7	5	5	5
21241A0212											8					7	5	5	5
21241A0213				7												6	5	5	5
21241A0214					7						10					8	5	5	5
21241A0215																7	5	5	5
21241A0216	6															4	5	5	5
21241A0217					7											8	5	5	5
21241A0218							8									7	5	5	5
21241A0219							8									8	5	5	5
21241A0220	6															8	5	5	5
21241A0221		6														9	5	5	5
21241A0222											9					8	5	5	5
21241A0223		6														8	5	5	5
21241A0224							8									9	5	5	5
21241A0225					7											8	5	5	5
21241A0226					7											9	5	5	5
21241A0227								8								7	5	5	5
21241A0228						7										10	5	5	5
21241A0229						7										9	5	5	5
21241A0230								8								9	5	5	5
21241A0231								8								4	5	5	5
21241A0232		6														7	5	5	5
21241A0233						7										6	5	5	5
21241A0234		6														7	5	5	5
21241A0235		6														4	5	5	5

21241A0236								8								9		5	5	5
21241A0237						7										7		5	5	5
21241A0238									8							9		5	5	5
21241A0239						7										9		5	5	5
21241A0240						7										8		5	5	5
21241A0241								8								8		5	5	5
21241A0242								8								9		5	5	5
21241A0243		6														8		5	5	5
21241A0244						7										9		5	5	5
21241A0245		6														7		5	5	5
21241A0246		6														10		5	5	5
21241A0247								8								9		5	5	5
21241A0248						7										9		5	5	5
21241A0249									8							4		5	5	5
21241A0250												10				7		5	5	5
21241A0251											9					6		5	5	5
21241A0252	6															7		5	5	5
21241A0253												10				4		5	5	5
21241A0254	6															9		5	5	5
21241A0255	6															8		5	5	5
21241A0256				7												8		5	5	5
21241A0257				7												9		5	5	5
21241A0258							8									8		5	5	5
21241A0259			8													9		5	5	5
21241A0260									8							7		5	5	5
21241A0261									10							10		5	5	5
21241A0262						7										9		5	5	5
21241A0263						5										9		5	5	5
22245A0201			7													4		5	5	5
22245A0202									10							7		5	5	5
22245A0203						7										6		5	5	5
22245A0204						6										7		5	5	5
22245A0205			8													4		5	5	5
22245A0206									9							8		5	5	5

if your class strength is > 60 then *insert rows above the green row Last record* , Similarly *delete the empty rows above green row* if the class strenght is < 60)

Total number of students appeared for the examination (NST)	9	8	3	5	4	12	5	7	6	1	5	4				69		69	69	69
Total number of students	9	8	3	5	4	12	5	7	6	1	5	4				69		69	69	69
Attempt % (TAP) =	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00				100.00		100.00	100.00	100.00
Total number of Students	8	8	3	5	4	11	5	7	6	1	5	4				61		69	69	69
Attainment % (TMP) =	88.89	100.00	100.00	100.00	100.00	91.67	100.00	100.00	100.00	100.00	100.00	100.00				88.41		100.00	100.00	100.00
Score(S)	3	3	3	3	3	3	3	3	3	3	3	3				3		3	3	3

Note : CO attainment is considered to be zero if the attempt % is less than 30%

CO Validation	**1**	**1**	**2**	**2**	**3**	**3**	**4**	**4**	**5**	**5**	**1**	**2**				**1,2,3,4,5**		**1,2,3,4,5**	**1,2,3,4,5**	**1,2,3,4,5**
Course Outcome	**CO1**	**CO1**	**CO2**	**CO2**	**CO3**	**CO3**	**CO4**	**CO4**	**CO5**	**CO5**	**CO1**	**CO2**				**O1,CO2,CO3,CO4,CO**		**CO1,CO2, CO3,CO4, CO5**	**CO1,CO2, CO3,CO4, CO5**	**CO1,CO2,CO3,CO4,CO5**
Marks (Y)	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**				**10**		**5**	**5**	**5**
No. of COs Shared (Z)	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**				**5**		**5**	**5**	**5**
Y/Z	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**				**2**		**1**	**1**	**1**
S*Y/Z	**30**	**30**	**30**	**30**	**30**	**30**	**30**	**30**	**30**	**30**	**30**	**30**				**6**		**3**	**3**	**3**

CO1	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**				**1**		**1**	**1**	**1**
CO2	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**				**1**		**1**	**1**	**1**
CO3	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**				**1**		**1**	**1**	**1**
CO4	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**				**1**		**1**	**1**	**1**
CO5	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**				**1**		**1**	**1**	**1**
CO6	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**				**0**		**0**	**0**	**0**
CO7	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**				**0**		**0**	**0**	**0**

Weighted Average for Attainment relevance (Internal CODn)	CO1	CO2	CO3	CO4	CO5	CO6	CO7
	3.00	3.00	3.00	3.00	3.00		

!! Caution !! For CO Values < 2.1 should be justified with Remidial Action Report.

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Indirect CO Attainments

Academic Year	2022 - 23		Department	EEE	Name of the Programme	B.Tech	
Year - Semester	II - I		Course Name :	PRINCIPLES OF ANALOG ELECTRONICS LAB	Course Code	GR20A2029	Section A

Course Outcomes survey on Scale 1 (Low) to 5 (High)

Course Outcome→	Recall types of active components.	Draw characteristics of Diode, BJT and MOSFET	Design Operational Amplifiers as inverting and non-inverting amplifier	Apply mathematical operation on signals using Operational Amplifier	Explain operation of Analog to Digital Conversion (ADC) and Digital to Analog Conversion (DAC)
CO Number 1,2,3,4,5,6,7	1	2	3	4	5
Marks	5	5	5	5	5
S.No/Roll No.	Note : Enter Marks Between Two Green rows.				
21241A0201	3	3	3	3	3
21241A0202	5	5	5	5	5
21241A0203	5	5	5	5	5
21241A0204	3	3	3	3	3
21241A0205	4	4	4	4	4
21241A0206	4	4	4	4	4
21241A0207	3	3	3	3	3
21241A0208	3	3	3	3	3
21241A0209	4	4	4	4	4
21241A0210	3	3	3	3	3
21241A0211	5	5	5	5	5
21241A0212	5	5	5	5	5
21241A0213	3	3	3	3	3
21241A0214	4	4	4	4	4
21241A0215	4	4	4	4	4
21241A0216	3	3	3	3	3
21241A0217	5	5	5	5	5
21241A0218	3	3	3	3	3
21241A0219	5	5	5	5	5
21241A0220	2	2	2	2	2
21241A0221	3	3	3	3	3

21241A0222	3	3	3	3	3
21241A0223	5	5	5	5	5
21241A0224	2	2	2	2	2
21241A0225	4	4	4	4	4
21241A0226	3	3	3	3	3
21241A0227	5	5	5	5	5
21241A0228	2	2	2	2	2
21241A0229	2	2	2	2	2
21241A0230	4	4	4	4	4
21241A0231	4	4	4	4	4
21241A0232	3	3	3	3	3
21241A0233	5	5	5	5	5
21241A0234	3	3	3	3	3
21241A0235	5	5	5	5	5
21241A0236	2	2	2	2	2
21241A0237	3	3	3	3	3
21241A0238	3	3	3	3	3
21241A0239	5	5	5	5	5
21241A0240	2	2	2	2	2
21241A0241	4	4	4	4	4
21241A0242	3	3	3	3	3
21241A0243	5	5	5	5	5
21241A0244	2	2	2	2	2
21241A0245	2	2	2	2	2
21241A0246	4	4	4	4	4
21241A0247	4	4	4	4	4
21241A0248	3	3	3	3	3
21241A0249	5	5	5	5	5
21241A0250	3	3	3	3	3
21241A0251	5	5	5	5	5
21241A0252	2	2	2	2	2
21241A0253	3	3	3	3	3
21241A0254	3	3	3	3	3
21241A0255	5	5	5	5	5
21241A0256	2	2	2	2	2
21241A0257	4	4	4	4	4
21241A0258	3	3	3	3	3
21241A0259	5	5	5	5	5
21241A0260	2	2	2	2	2
21241A0261	2	2	2	2	2
21241A0262	3	3	3	3	3
21241A0263	3	3	3	3	3

22245A0201	3	3	3	3	3
22245A0202	2	2	2	2	2
22245A0203	3	3	3	3	3
22245A0204	5	5	5	5	5
22245A0205	3	3	3	3	3
22245A0206	2	2	2	2	2
if your class strength is > 60 then *insert rows* *above the green row Last record* , Similarly *delete the* *empty rows above green row* if the class strenght is < 60)					
Total number of students appeared for the examination (NST)	69	69	69	69	69
Total number of students attempted the question (NSA)	69	69	69	69	69
Attempt % (TAP) = (NSA/NST)*100	100.00	100.00	100.00	100.00	100.00
Total number of Students who got more than 60% marks (NSM)	55	55	55	55	55
Attainment % (TMP) = (NSM/NSA)*100	79.71	79.71	79.71	79.71	79.71
Score(S)	3	3	3	3	3

CO attainment is considered zero if the attempt % is less than 30%

Indirect CO (COIn)	CO1	CO2	CO3	CO4	CO5
	3	3	3	3	3

!! Caution !! For CO Values < 2.1 should be justified with Remidial Action Report.

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Direct External CO Attainment

Academic Year	2022 - 23		Department	EEE		Name of the Programme	B.Tech		Sec	A
Year - Semester	II - I		Course Name :	PRINCIPLES OF ANALOG ELECTRONICS LAB		Course Code	GR20A2029			

	Part A										Part B					
	Q.No 1	Q.No 2	Q.No 3	Q.No 4	Q.No 5	Q.No 6	Q.No 7	Q.No 8	Q.No 9	Q.No 10	Q.No 11	Q.No 12	Q. No 13	Q. No 14	Q. No 15	Viva
Enter CO Number → 1,2,3,4,5	1	1	2	2	3	3	4	4	5	5	1	2				1,2,3,4,5
Marks →	50	50	50	50	50	50	50	50	50	50	50	50				20
S.No/Roll No.	***Note :*** Enter Marks Between Two Green rows. ***Another Note :*** Additional Columns if Required should be inserted after column H and appropriately rename the Q. Nos.															
21241A0201			49													19
21241A0202				48												19
21241A0203								45								18
21241A0204	50															18
21241A0205							36									19
21241A0206								37								18
21241A0207												42				18
21241A0208										39						19
21241A0209	46															9
21241A0210		42														10
21241A0211			31													9
21241A0212									38							7
21241A0213									38							10
21241A0214											43					17
21241A0215						35										10
21241A0216								37								18
21241A0217											43					7
21241A0218											39					19
21241A0219										43						18
21241A0220							36									18
21241A0221												42				19
21241A0222										43						18

21241A0223							36									18
21241A0224										38						19
21241A0225										37						9
21241A0226		46														10
21241A0227					47											15
21241A0228							45									14
21241A0229									44							10
21241A0230						32										17
21241A0231				23												10
21241A0232									38							19
21241A0233									38							18
21241A0234											43					18
21241A0235						35										19
21241A0236								37								18
21241A0237											43					18
21241A0238											39					19
21241A0239										43						9
21241A0240							36									10
21241A0241												42				16
21241A0242										43						7
21241A0243							36									10
21241A0244										38						17
21241A0245										37						10
21241A0246		46														18
21241A0247					47											13
21241A0248							45									19
21241A0249									44							18
21241A0250									38							18
21241A0251									38							19
21241A0252											43					18
21241A0253						35										18
21241A0254								37								19
21241A0255											43					14
21241A0256											39					10
21241A0257										43						11
21241A0258							36									12
21241A0259												42				10
21241A0260										43						17

21241A0261							36									10
21241A0262										38						18
21241A0263										37						19
22245A0201		46														18
22245A0202					47											18
22245A0203							45									19
22245A0204									44							9
22245A0205				48												10
22245A0206					47											15
if your class strength is > 60 then *insert* *rows above the green row Last record* , Similarly *delete the empty rows above green row* if the class strenght is < 60)																
Total number of students appeared for the examination (NST)	2	4	2	3	4	4	10	5	9	13	9	4				69
Total number of students	2	4	2	3	4	4	10	5	9	13	9	4				69
Attempt % (TAP) =	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00				100.00
Total number of Students who got more than 60% marks (NSM)	2	4	2	2	4	4	10	5	9	13	9	4				47
Attainment % (TMP) =	100.00	100.00	100.00	66.67	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00				68.12
Score(S)	3	3	3	3	3	3	3	3	3	3	3	3				3
CO attainment is considered zero if the attempt % is less than 30%																
CO Validation	**1**	**1**	**2**	**2**	**3**	**3**	**4**	**4**	**5**	**5**	**1**	**2**				**1,2,3,4,5**
Course Outcome	**CO1**	**CO1**	**CO2**	**CO2**	**CO3**	**CO3**	**CO4**	**CO4**	**CO5**	**CO5**	**CO1**	**CO2**				**CO1,CO2,CO3,CO4,CO5**
Marks (Y)	**50**	**50**	**50**	**50**	**50**	**50**	**50**	**50**	**50**	**50**	**50**	**50**				**20**
No. of COs Shared (Z)	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**				**5**
Y/Z	**50**	**50**	**50**	**50**	**50**	**50**	**50**	**50**	**50**	**50**	**50**	**50**				**4**
S*Y/Z	**150**	**150**	**150**	**150**	**150**	**150**	**150**	**150**	**150**	**150**	**150**	**150**				**12**
CO1	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**				**1**
CO2	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**				**1**
CO3	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**				**1**

CO4	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**				**1**
CO5	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**				**1**

Weighted Average for Attainment relevance (Internal CODn)	CO1	CO2	CO3	CO4	CO5	CO6	CO7
	3.00	3.00	3.00	3.00	3.00		

!! Caution !! For CO Values < 2.1 should be justified with Remidial Action Report.

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Summary Sheet CO Attainments

Academic Year:	2022 - 23
Course/Subject:	PRINCIPLES OF ANALOG ELECTRONICS LAB
Department:	EEE
Section	A

Name of the Program:	B.Tech
Course Code:	GR20A2029
Year - Semester :	II - I

Attainment/CO	CO1	CO2	CO3	CO4	CO5	CO6	CO7
Attainment for Direct Internal CO (Mid I & II, Assignments, Tutorials, Assessments, etc.)	3.00	3.00	3.00	3.00	3.00		
Attainment for Direct External CO (End Semester Exam)	3.00	3.00	3.00	3.00	3.00		
Direct CO (0.3*Internal + 0.7*External)	3.00	3.00	3.00	3.00	3.00		
Indirect CO	3.00	3.00	3.00	3.00	3.00		
Final CO (COFn) = (0.9 x Direct CO + 0.1 x Indirect CO)	**3.00**	**3.00**	**3.00**	**3.00**	**3.00**		

CO	Course Outcome	Remedial Action for COs Less than 70% (2.10)
CO1	Recall types of active components.	
CO2	Draw characteristics of Diode, BJT and MOSFET	
CO3	Design Operational Amplifiers as inverting and non-inverting amplifier	
CO4	Apply mathematical operation on signals using Operational Amplifier	

CO5	Explain operation of Analog to Digital Conversion (ADC) and Digital to Analog	

ID No.	Name of the Faculty	Department	Signature
692	U.Vijaya Lakshmi	EEE	
1279	M.Prashanth	EEE	

HOD **DAA**

Copy to: IQAC

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Direct Internal CO Attainments

Academic Year	2022 - 23
Year - Semester	II - I

Department	EEE
Course Name :	PRINCIPLES OF ANALOG ELECTRONICS LAB

Name of the Programme	B.Tech
Course Code	GR20A2029

P-Outcomes / C-Outcomes	A	B	C	D	E	F	G	H	I	J	K	L	PSO1	PSO2
1	M	L	M	M	M	H	H	L	H	H	L	L	L	L
2	M	M	L	H	M	H	H	L	H	H	M	L	L	L
3	M	M	L	H	M	H	H	L	H	H	M	L	H	H
4	M	M	L	M	M	H	H		H	H	M		L	L
5	M	M	L	L	M	H	H		H	H	M	L	H	H
6														
7														

Enter H,M, L values of CO-PO Mapping Matrix in blue shaded rows 12 - 18 for seven CO s automatically PO Attainments are Calculated

Convert above mappings to scale 1-3

P-Outcomes / C-Outcomes	A	B	C	D	E	F	G	H	I	J	K	L	PS01	PSO2
CO1	2	1	2	2	2	3	3	1	3	3	1	1	1	1
CO2	2	2	1	3	2	3	3	1	3	3	2	1	1	1
CO3	2	2	1	3	2	3	3	1	3	3	2	1	3	3
CO4	2	2	1	2	2	3	3		3	3	2		1	1
CO5	2	2	1	1	2	3	3		3	3	2	1	3	3
CO6														
CO7														
Expected Attainment	2.00	1.80	1.20	2.20	2.00	3.00	3.00	1.00	3.00	3.00	1.80	1.00	1.80	1.80

	CO1	CO2	CO3	CO4	CO5	CO6	CO7
Final Cos CoF	3.00	3.00	3.00	3.00	3.00		

	Attained PO A	Attained PO B	Attained PO C	Attained PO D	Attained PO E	Attained PO F	Attained PO G	Attained PO H	Attained PO I	Attained PO J	Attained PO K	Attained PO L	PSO1	PSO2
CO1	2.00	1.00	2.00	2.00	2.00	3.00	3.00	1.00	3.00	3.00	1.00	1.00	1.00	1.00
CO2	2.00	2.00	1.00	3.00	2.00	3.00	3.00	1.00	3.00	3.00	2.00	1.00	1.00	1.00

CO3	2.00	2.00	1.00	3.00	2.00	3.00	3.00	1.00	3.00	3.00	2.00	1.00	3.00	3.00
CO4	2.00	2.00	1.00	2.00	2.00	3.00	3.00		3.00	3.00	2.00		1.00	1.00
CO5	2.00	2.00	1.00	1.00	2.00	3.00	3.00		3.00	3.00	2.00	1.00	3.00	3.00
CO6														
CO7														
Attained	2.00	1.80	1.20	2.20	2.00	3.00	3.00	1.00	3.00	3.00	1.80	1.00	1.80	1.80

	A	B	C	D	E	F	G	H	I	J	K	L		
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO1	PSO2
Expected	2.00	1.80	1.20	2.20	2.00	3.00	3.00	1.00	3.00	3.00	1.80	1.00	1.80	1.80
Attained	2.00	1.80	1.20	2.20	2.00	3.00	3.00	1.00	3.00	3.00	1.80	1.00	1.80	1.80

Note : PO is Satisfied if attained PO > 70, U indicates PO Unsatisfied

Faculty Co-Ordinator

HOD