Sri Indu Institute of Engineering & Technology

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Affiliated to JNTUH, Hyderabad.

COURSE FILE

ON

BASIC SIMULATION LAB

Course Code – EC308ES

II B.Tech I-SEMESTER

A.Y.: 2022-2023

Prepared by

Mr. T.NARESH
Assistant Professor

Head of the Department
Electronics and Communication Engg. Dept
SRI INDU INSTITUTE OF ENGG & TECH
Sheriguda(V), Ibrahimpatnam(M), R.R.Dist-501 510

PRINCIPAL
Sri Indu Institute of Engineering & Tech
Sheriguda(Vill), Ibrahimpatnam
R.R. Dist. Telangana-501 510.

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Name of the Physical laboratory	BASIC SIMULATION LAB
Course Code	EC308ES
Room No	C-002
Name of the lab In charge	T.NARESH
Name of the faculty In charge	T.NARESH

Index of Lab File

INSTITUTE VISION AND MISSION

Vision:

To become a premier institute of academic excellence by providing the world class education that transforms individuals into high intellectuals, by evolving them as empathetic and responsible citizens through continuous improvement.

Mission:

IM1: To offer outcome-based education and enhancement of technical and practical skills.

IM2: To Continuous assess of teaching-learning process through institute-industry collaboration.

IM3: To be a centre of excellence for innovative and emerging fields in technology development with state-of-art facilities to faculty and students' fraternity.

IM4: To Create an enterprising environment to ensure culture, ethics and social responsibility among the stakeholders.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

DEPARTMENT VISION AND MISSION

Vision:

To become a recognized center in the field of Electronics and Communication Engineering by producing creative engineers with social responsibility and address ever-changing global challenges.

Mission:

DM1: To facilitate an academic environment that enables student's centric learning.

DM2: To provide state-of-the-art hardware and software technologies to meet industry requirements.

DM3: To continuously update the Academic and Research infrastructure.

DM4: To Conduct Technical Development Programs for overall professional caliber of Stake Holders.

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PROGRAM EDUCATIONAL OBJECTIVES

Program Educational objectives are to Promote:

PEO1: Graduates with a strong foundation in Electronics and Communication Engineering, Science and Technology to become successful in the chosen professional career.

PEO2: Graduates with ability to execute innovative ideas for Research and Development with continuous learning.

PEO3: Graduates inculcated with industry based soft-skills to enable employability.

PEO4: Graduates demonstrate with ability to work in interdisciplinary teams and ethical professional behavior.

PROGRAM SPECIFIC OUTCOMES

PSO 1: Design Skills: Design, analysis and development a economical system in the area of Embedded system & VLSI design.

PSO 2: Software Usage: Ability to investigate and solve the engineering problems using MATLAB, Keil and Xilinx.

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PROGRAM OUTCOMES

1. **ENGINEERING KNOWLEDGE**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

2. **PROBLEM ANALYSIS**: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

3. **DESIGN/DEVELOPMENT OF SOLUTIONS**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

4. **CONDUCT INVESTIGATIONS OF COMPLEX PROBLEMS**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

5. **MODERN TOOL USAGE**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

6. **THE ENGINEER AND SOCIETY**: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

7. **ENVIRONMENT AND SUSTAINABILITY**: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

8. **ETHICS**: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9. **INDIVIDUAL AND TEAM WORK**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. **COMMUNICATION**: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, give and receive clear instructions.

11. **PROJECT MANAGEMENT AND FINANCE**: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. **LIFE-LONG LEARNING**: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech. in ELECTRONICS AND COMMUNICATION ENGINEERING
COURSE STRUCTURE & SYLLABUS (R18)

Applicable From 2018-19 Admitted Batch

I YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	MA101BS	Mathematics - I	3	1	0	4
2	AP102BS	Applied Physics	3	1	0	4
3	CS103ES	Programming for Problem Solving	3	1	0	4
4	ME104ES	Engineering Graphics	1	0	4	3
5	AP105BS	Applied Physics Lab	0	0	3	1.5
6	CS106ES	Programming for Problem Solving Lab	0	0	3	1.5
7	*MC109ES	Environmental Science	3	0	0	0
		Induction Programme				
		Total Credits	**13**	**3**	**10**	**18**

I YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	MA201BS	Mathematics - II	3	1	0	4
2	CH202BS	Chemistry	3	1	0	4
3	EE203ES	Basic Electrical Engineering	3	0	0	3
4	ME205ES	Engineering Workshop	1	0	3	2.5
5	EN205HS	English	2	0	0	2
6	CH206BS	Engineering Chemistry Lab	0	0	3	1.5
7	EN207HS	English Language and Communication Skills Lab	0	0	2	1
8	EE208ES	Basic Electrical Engineering Lab	0	0	2	1
		Total Credits	**12**	**2**	**10**	**19**

II YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	EC301PC	Electronic Devices and Circuits	3	1	0	4
2	EC302PC	Network Analysis and Transmission Lines	3	0	0	3
3	EC303PC	Digital System Design	3	1	0	4
4	EC304PC	Signals and Systems	3	1	0	4
5	EC305ES	Probability Theory and Stochastic Processes	3	0	0	3
6	EC306PC	Electronic Devices and Circuits Lab	0	0	2	1
7	EC307PC	Digital System Design Lab	0	0	2	1
8	EC308ES	Basic Simulation Lab	0	0	2	1
9	*MC309	Constitution of India	3	0	0	0
		Total Credits	**18**	**3**	**6**	**21**

II YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	MA401BS	Laplace Transforms, Numerical Methods & Complex Variables	3	1	0	4
2	EC402PC	Electromagnetic Fields and Waves	3	0	0	3

EC308ES: BASIC SIMULATION LAB

B.Tech. II Year I Sem.

L	T	P	C
0	0	2	1

Note:

- All the experiments are to be simulated using MATLAB or equivalent software
- Minimum of 15 experiment are to be completed

List of Experiments:

1. Basic Operations on Matrices.
2. Generation of Various Signals and Sequences (Periodic and Aperiodic), such as Unit Impulse, Unit Step, Square, Saw tooth, Triangular, Sinusoidal, Ramp, Sinc.
3. Operations on Signals and Sequences such as Addition, Multiplication, Scaling, Shifting, Folding, Computation of Energy and Average Power.
4. Finding the Even and Odd parts of Signal/Sequence and Real and Imaginary parts of Signal.
5. Convolution for Signals and sequences.
6. Auto Correlation and Cross Correlation for Signals and Sequences.
7. Verification of Linearity and Time Invariance Properties of a given Continuous/Discrete System.
8. Computation of Unit sample, Unit step and Sinusoidal responses of the given LTI system and verifying its physical realiazability and stability properties.
9. Gibbs Phenomenon Simulation.
10. Finding the Fourier Transform of a given signal and plotting its magnitude and phase spectrum.
11. Waveform Synthesis using Laplace Transform.
12. Locating the Zeros and Poles and plotting the Pole-Zero maps in S-plane and Z-Plane for the given transfer function.
13. Generation of Gaussian noise (Real and Complex), Computation of its mean, M.S. Value and its Skew, Kurtosis, and PSD, Probability Distribution Function.
14. Verification of Sampling Theorem.
15. Removal of noise by Autocorrelation / Cross correlation.
16. Extraction of Periodic Signal masked by noise using Correlation.
17. Verification of Weiner-Khinchine Relations.
18. Checking a Random Process for Stationarity in Wide sense.

Major Equipments required for Laboratories:

1. Computer System with latest specifications connected
2. Window Xp or equivalent
3. Simulation software-MAT Lab or any equivalent simulation software

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Basic Simulation Lab

CO's, PO's,PSO's MAPPING

Class: II ECE-A

Course Outcomes

After completing this course, the student will be able to:
C217.1: Identifying the basic operations on matrices. (Knowledge)
C217.2 : Identify and analyze the various signals and sequences.(Analysis)
C217.3: Point out even and odd signals and real and imaginary parts of signals. and Zero's and poles for a given transfer function (Analysis)
C217.4 : Construct the convolution for signals and sequences, Linear-non linear and time variant-Invarient of sequences.(Analysis)
C217.5: Compare the the auto correlation, cross correlation and sampling theorem(Evaluation)
C217.6 : Express the fourier transform and laplace transform(comprehension)

Mapping of course outcomes with program outcomes:

High -3 Medium -2 Low-1

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C217.1	3	-	-	2	3	-	-	-	-	2	-	-	1	3
C217.2	2	3	-	1	2	-	-	-	-	2	-	-	2	1
C217.3	2	3	3	2	1	-	-	-	-	2	-	-	3	3
C217.4	3	2	3	3	2	-	-	-	-	3	-	-	2	2
C217.5	2	3	-	2	2	-	-	-	-	2	-	-	2	1
C217.6	2	3	-	2	3	-	-	-	-	3	-	-	2	2
C217	2.3	2.8	2	2	2.2	-	-	-	-	2.3	-	-	2	2

Basic Simulation Lab

LIST OF EXPERIMENTS AND THEIR CO, PO/PSO MAPPING

S.No	Name of The Experiment	CO	PO	PSO
1	Basic Operations on Matrices.	1,3	1,2,3,4,5,10	1,2
2	Generation of Various Signals and Sequences (Periodic and Aperiodic), such as Unit Impulse, Unit Step, Square, Saw tooth, Triangular, Sinusoidal, Ramp, Sinc.	2,4	1,2,3,4,5,10	1,2
3	Operations on Signals and Sequences such as Addition, Multiplication, Scaling, Shifting, Folding, Computation of Energy and Average Power.	2,4	1,2,3,4,5,10	1,2
4	Finding the Even and Odd parts of Signal/Sequence and Real and Imaginary parts of Signal.	2,4	1,2,3,4,5,10	1,2
5	Convolution for Signals and sequences.	2,4,5	1,2,3,4,5,10	1,2
6	Auto Correlation and Cross Correlation for Signals and Sequences.	2,4,5	1,2,3,4,5,10	1,2
7	Verification of Linearity and Time Invariance Properties of a given Continuous/Discrete System.	2,4,5	1,2,3,4,5,10	1,2
8	Computation of Unit sample, Unit step and Sinusoidal responses of the given LTI system and verifying its physical realiazability and stability properties.	2,4,5	1,2,3,4,5,10	1,2
9	Gibbs Phenomenon Simulation.	2,4	1,2,3,4,5,10	1,2

Basic Simulation Lab

LIST OF EXPERIMENTS AND THEIR CO, PO/PSO MAPPING

10	Finding the Fourier Transform of a given signal and plotting its magnitude and phase spectrum.	2,4,6	1,2,3,4,5,10	1,2
11	Waveform Synthesis using Laplace Transform.	2,4,6	1,2,3,4,5,10	1,2
12	Locating the Zeros and Poles and plotting the Pole-Zero maps in S-plane and Z-Plane for the given transfer function.	2,4,6	1,2,3,4,5,10	1,2
13	Generation of Gaussian noise (Real and Complex), Computation of its mean, M.S. Value and its Skew, Kurtosis, and PSD, Probability Distribution Function.	1,2,4,6	1,2,3,4,5,10	1,2
14	Verification of Sampling Theorem.	2,4,5,6	1,2,3,4,5,10	1,2
15	Removal of noise by Autocorrelation / Cross correlation.	1,2,4,5,6	1,2,3,4,5,10	1,2
16	Extraction of Periodic Signal masked by noise using Correlation.	1,2,4,5,6	1,2,3,4,5,10	1,2
17	Verification of Weiner-Khinchine Relations.	1,2,4,6	1,2,3,4,5,10	1,2
18	Checking a Random Process for Stationarity in Wide sense.	1,2,4,5,6	1,2,3,4,5,10	1,2

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Class Timetable

CLASS: II-B.Tech ECE-A **A.Y:2022-23** **SEMESTER: I** **LH: C-101**

TIME/ DAY	I 9:40-10:30	II 10:30 -11:20	III 11:20-12:10	IV 12:10-1:00	1:00-1:30	V 1:30-2:20	VI 2:20-3:10	VII 3:10-4:00
MON	EDC	COI	EDC LAB / DSD LAB		LUNCH	DSD	NATL	SPORTS
TUE	PTSP	NATL	DSD	COI		EDC	SS	DSD(T)/SS(T)
WED	SS	PTSP	DSD LAB / BS LAB			DSD	SS(T)/EDC(T)	EDC
THU	NATL	PTSP	COI	EDC(T)/DSD(T)		SS	DSD	COUN
FRI	SS	EDC	COI	PTSP		LIB	CO-CU/DAA	
SAT	EDC	DSD	SS	NATL		PTSP	BS LAB / EDC LAB	

*(T) – Tutorial Concern Faculty

Course Code	Course Name	Name of the Faculty	Course Code	Course Name	Name of the Faculty
EC301PC	EDC-Electronic Devices and Circuits	K.Rajender	EC306PC	EDC LAB - Electronic Devices and Circuits Lab	K.Rajender/B.Ashwini/M.Srilatha
EC302PC	NATL-Network Analysis and Transmission Lines	M.Nagaraju	EC307PC	DSD LAB - Digital System Design Lab	G.Anusha/T.Divya/P.Krishna Rao
EC303PC	DSD-Digital System Design	G.Anusha	EC308ES	BS LAB - Basic Simulation Lab	P.Rajendra/T.Naresh
EC304PC	SS-Signals and Systems	P.Rajendra	LIB	Library	B.Ashwini/Dr.K.Srinivasa Reddy
EC305ES	PTSP-Probability Theory and Stochastic Processes	T.Naresh	COUN	Counseling	K.Rajender/G.Anusha/G.Anitha
*MC309	COI-Constitution of India	S.Swapna	CO-CU/DAA	Co-Curricular/Dept.Assc.Act.	K.Rajender/T.Naresh/D.Aruna
			SPORTS	Sports	G.Anitha/P.Sumana

Class Incharge

Head of The Department

PRINCIPAL
Principal
Sri Indu Institute of Engineering & Tech
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BASIC SIMULATION LAB

LAB EXTERNAL EXAM QUESTION PAPER

1. Write a Matlab program for the basic operations on matrices.
2. Write a Matlab program for the generation various signals and sequences.
3. Write a Matlab program for the operations on signals and sequences.
4. Write a Matlab program for finding the even and odd part of signal.
5. Write a Matlab program for finding real and imaginary parts of the signal.
6. Write a Matlab program for the convolution for signals and sequences.
7. Write a Matlab program for auto-correlation for signals and sequences.
8. Write a Matlab program for cross-correlation for signals and sequences.
9. Write a Matlab program for the verification of linearity and time invariance properties of a given discrete and continuous system.
10. Write a Matlab program for Computation of Unit sample, Unit step and Sinusoidal responses of the given LTI system and verifying its physical realiazability and stability properties.
11. Write a Matlab program for the gibbs phenomenon simulation.
12. Write a Matlab program for Finding the Fourier Transform of a given signal and plotting its magnitude and phase spectrum.
13. Write a Matlab program for waveform synthesis using laplace transform.
14. Write a Matlab program for Locating the Zeros and Poles and plotting the Pole-Zero maps in S-plane and Z-Plane for the given transfer function.
15. Write a Matlab program for Generation of Gaussian noise (Real and Complex), Computation of its mean, M.S. Value and its Skew, Kurtosis, and PSD, Probability Distribution Function.
16. Write a Matlab program for sampling theorem.
17. Write a Matlab program for removal of noise by auto-correlation.
18. Write a Matlab program for removal of noise by cross-correlation.
19. Write a Matlab program for Extraction of Periodic Signal masked by noise using Correlation.
20. Write a Matlab program for verification of weiner-khinchine relations.
21. Write a Matlab program for Checking a Random Process for Stationarity in Wide sense.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATIONS ENGINEERING

B.Tech II ECE Regular Lab External Exams Timetable

A.Y: 2022-23 **SEM: I**

S. No.	Name of the Lab & Lab Number	Year/ Branch Section	Date & Time of the Lab Exam	Lab Internal Examiners Details
1	Electronic Devices and Circuits Lab (A-113)	II ECE-A	11.04.2023 (10:00 AM – 01:00 PM)	Mr.K.Rajender & Mrs.G.Nirmala
		II ECE-B	12.04.2023 (10:00 AM – 01:00 PM)	
2	Digital System Design Lab (A-313)	II ECE-A	12.04.2023 (10:00 AM – 01:00 PM)	Mrs.G.Anusha & Mrs.P.Srilatha
		II ECE-B	13.04.2023 (10:00 AM – 01:00 PM)	
3	Basic Simulation Lab (C-002)	II ECE-A	13.04.2023 (10:00 AM – 01:00 PM)	Mr.T.Naresh & Mrs.S.Alekhya
		II ECE-B	11.04.2023 (10:00 AM – 01:00 PM)	

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DEPARTMENT OF ELECTRONICS AND COMMUNICATIONS ENGINEERING

B.Tech II ECE Regular Lab External Examiners from TKREC

A.Y: 2022-23 **SEM: I**

S. No.	Name of the Lab & Lab No.	Year/ Branch Section	Date & Time of the Lab Exam	Lab Internal Examiners Details	Lab External Examiners Details
1	Electronic Devices and Circuits Lab(A-113)	II ECE-A	11.04.2023 (10:00 AM – 01:00 PM)	Mr.K.Rajender 8897756066	B.Sunitha
		II ECE-B	12.04.2023 (10:00 AM – 01:00 PM)		Dr.G.Sirisha
2	Digital System Design Lab (A-313)	II ECE-A	12.04.2023 (10:00 AM – 01:00 PM)	Mrs.G.Anusha 8639937510	V.Nageshwar Reddy
		II ECE-B	13.04.2023 (10:00 AM – 01:00 PM)		V Lavanya
3	Basic Simulation Lab(C-002)	II ECE-A	13.04.2023 (10:00 AM – 01:00 PM)	Mr.T.Naresh 8919911324	V Amulya
		II ECE-B	11.04.2023 (10:00 AM – 01:00 PM)		Y Prathyusha
4	Analog and Digital Electronics Lab (A-114)	II CSE-A	15.04.2023 (10:00 AM – 01:00 PM)	Mrs.K.Padma 9030468759	B Rekha
		II CSE-B	11.04.2023 (10:00 AM – 01:00 PM)		B Nireesha
		II CSE-C	12.04.2023 (01:00 PM – 04:00 PM)		V.Nageshwar Reddy
		II CSE (CS)	11.04.2023 (01:00 PM – 04:00 PM)	Mrs.P.Kavitha 8125250145	B Sunitha
		II CSE (IOT)	12.04.2023 (10:00 AM – 01:00 PM)		N Aravind

HOD/ECE

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Basic Simulation Lab

LAB OCCUPANCY CHART

A.Y: 2022-23 **Year/Semester: II/I** **Lab No: C-002**

Period/ Day	1	2	3	4	01:00 –	5	6	7
	9:40-10:30	10:30-11:2	11:20 – 12:10	12:10 – 1:00	01:30	1:30-2:20	2:20-3:10	3:10-4:00
Monday						MAINTANANCE		
Tuesday								
Wednesday			BS LAB II ECE-A				BS LAB II ECE-B	
Thursday		MAINTANANCE			LUNCH BREAK			
Friday			BS LAB II ECE-B					
Saturday							BS LAB II ECE-A	

S.No.	Class	Faculty In-charge	Supporting Faculty
1	BS Lab III ECE-A	Mr.P.Rajendra	Mr.T.Naresh
2	BS Lab III ECE-B	Mrs.P.Sumana	Mrs.P.Meena

S.No.	Class	Lab In-charge
1	BS Lab II ECE-A&B	Mr.T.Naresh

Lab In-charge

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DEPARTMENT OF
ELECTRONICS & COMMUNICATION ENGINEERING

Dos and Don'ts

- All students must observe the dress code while in the laboratory
- Foods, drinks and smoking are **NOT** allowed
- All bags must be left at the indicated place.
- The lab time table must be strictly followed.
- Be **PUNCTUAL** for your laboratory session.
- Experiment must be completed within the given time.
- Noise must be kept to minimum.
- Workspace must be kept clean and tidy at all time.
- Handle all apparatus with care.
- All students are liable for any damage to equipment due to their own negligence.
- All equipment,apparatus,tools and components must be **RETURNED** to their original place after use.
- Students are strictly **PROHIBITED** from taking out any items from the laboratory.
- Report immediately to the lab supervisor if any injury occurred.
- Report immediately to the lab supervisor if any damages to equipment.

BEFORE LIVING LAB

- Place the stools under the lab bench.
- Turn off the power to all instruments.
- Please check the laboratory notice board regularly for updates.

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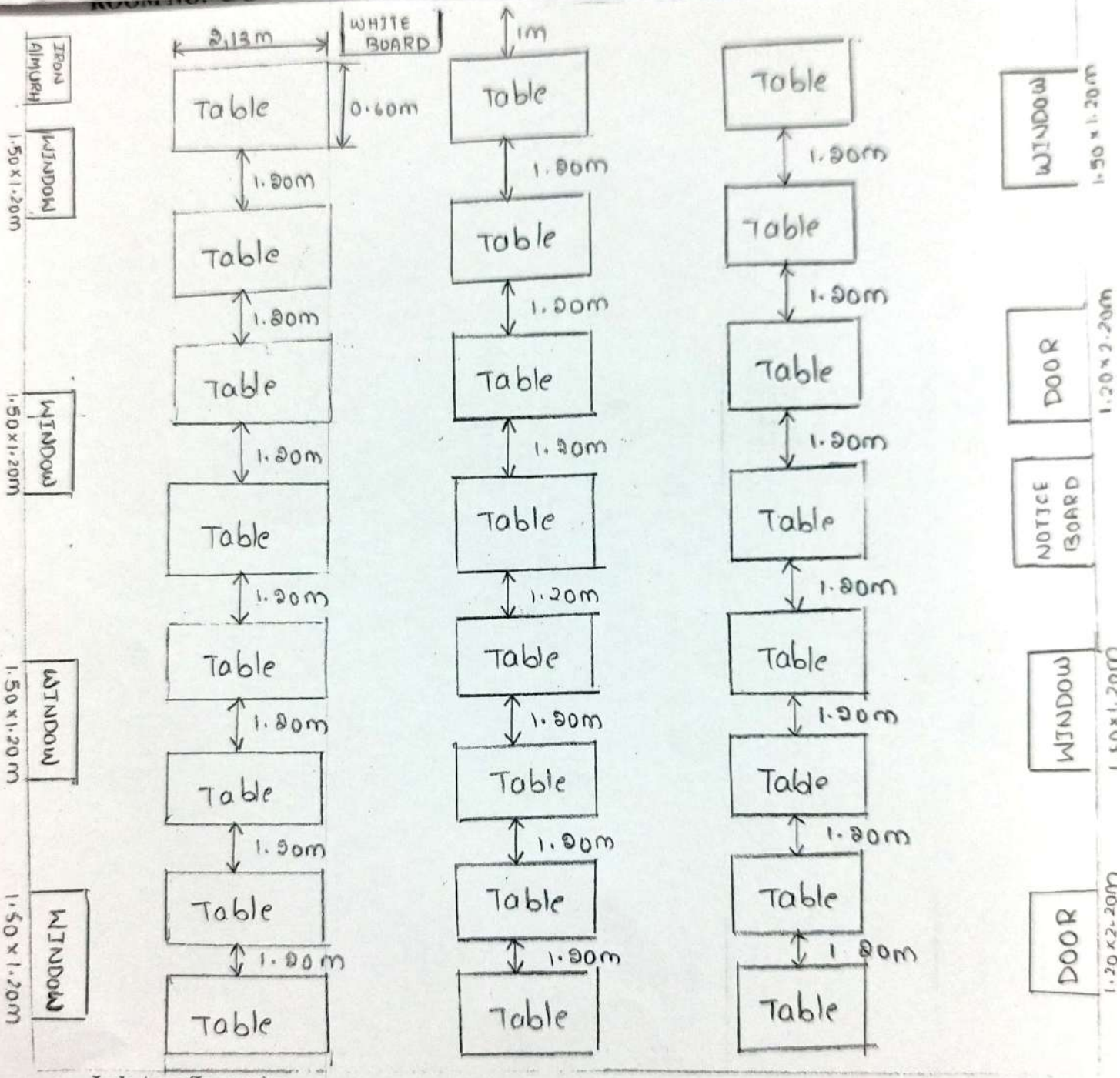
DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

BASIC SIMULATION LAB

PHYSICAL LAB FLOOR PLAN

ROOM NO: C002 **BLOCK:** C **FLOOR:** G **DATE:** 01-06-2023



Lab Area(In sqm)= 16 x 9.6 = 153.6

Lab In-charge

Head of The Department

Electronics and Communication Engg. Dept
SRI INDU INSTITUTE OF ENGG & TECH
Sheriguda(V), Ibrahimpatnam(M), R.R.Dist-501 510,

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

Accredited by NAAC with A+ Grade, Recognized under 2(f) of UGC Act 1956
(Approved by AICTE, New Delhi and Affiliated to JNTUH, Hyderabad)
Khalsa Ibrahimpatnam, Sheriguda (V), Ibrahimpatnam (M), Ranga Reddy Dist., Telangana – 501 510
Website: https://siiet.ac.in/

LAB MANUAL LINK

https://drive.google.com/file/d/1QVE0B06EbSz4bhdQyUF3tuT16eHZCRcA/view?usp=sharing

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

Department of Electronics and Communication Engineering

Course Outcome Attainment (Internal Examination-1)

Name of the faculty : T.NARESH 2022-23

Branch & Section: ECE - A I internal

Course Name: BS LAB Year/Semester: II/I

S.No	HT No.	A+A+CD+MG	T+P+C+R	DDE
Max. Marks ==>		5	5	15
1	21X31A0401	2	2	12
2	21X31A0402	3	3	12
3	21X31A0403	3	2	12
4	21X31A0404	4	3	13
5	21X31A0405	4	3	13
6	21X31A0406	5	4	14
7	21X31A0407	4	3	13
8	21X31A0408	3	3	14
9	21X31A0409	1	1	12
10	21X31A0410	4	4	14
11	21X31A0412	5	4	14
12	21X31A0413	4	3	13
13	21X31A0414	3	3	14
15	21X31A0415	3	3	14
16	21X31A0416	4	3	13
17	21X31A0417	3	3	15
18	21X31A0418	4	5	14
19	21X31A0420	5	5	14
20	21X31A0421	4	4	14
21	21X31A0422	3	4	14
22	21X31A0423	5	4	14
23	21X31A0424	4	3	14
24	21X31A0425	4	3	14
27	21X31A0426	4	4	14
28	21X31A0427	4	4	14
29	21X31A0428	4	4	14
30	21X31A0429	3	3	14
31	21X31A0431	4	4	14
32	21X31A0432	3	4	14
33	21X31A0433	4	3	14
34	21X31A0434	4	3	14
35	21X31A0435	5	4	12
36	21X31A0436	1	1	12
37	21X31A0437	0	1	13
38	22X35A0401	4	4	15
39	22X35A0402	4	4	15
40	22X35A0403	3	3	14
41	22X35A0404	4	4	14
42	22X35A0405	4	3	14
43	22X35A0406	4	3	12

44	22X35A0407	5	4	14
45	22X35A0408	4	5	14
46	22X35A0409	4	5	14
47	22X35A0410	4	5	14
48	22X35A0411	5	4	14
49	22X35A0412	4	4	14
50	22X35A0413	4	5	15
51	22X35A0414	4	4	14
52	22X35A0415	3	4	12
53	22X35A0416	5	5	14
54	22X35A0417	3	3	14
56	22X35A0418	5	4	14
57	22X35A0419	4	4	14
58	22X35A0420	4	5	14
Target set by the faculty / HoD		3.00	3.00	9.00
Number of students performed above the target		50	49	54
Number of students attempted		54	54	54
Percentage of students scored more than target		93%	91%	100%

CO Mapping with Exam Questions:

CO - 1	**y**	**y**	y
CO - 2	**y**	**y**	y
CO - 3	**y**	**y**	y
CO - 4	**y**	**y**	y
CO - 5	**y**	**y**	y
CO - 6	**y**	**y**	y

% Students Scored >Target %	93%	91%	100%

CO Attainment based on Exam Questions:

CO - 1	93%	93%	100%
CO - 2	93%	91%	100%
CO - 3	93%	91%	100%
CO - 4	93%	91%	100%
CO - 5	93%	91%	100%
CO - 6	93%	91%	100%

CO	Intrnal practica	DDE	OverallI	Level
CO-1	93%	100%	96%	3.00
CO-2	92%	100%	96%	3.00
CO-3	92%	100%	96%	3.00
CO-4	92%	100%	96%	3.00
CO-5	92%	100%	96%	3.00
CO-6	92%	100%	96%	3.00

Attainment Level	
1	40%
2	50%
3	60%

Attainment (Internal 1 Examination) = **3.00**

NOTE

A+A+CD+MG : AIM+APPARATUS+CIRCUIT DIAGRAM+MODEL GRAPH

T+P+C+R : THEORY+PROCEDURE+CALCULATION+RESULT

DDE : Day to Day Evaluation

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

Department of Electronics and Communication Engineering

Course Outcome Attainment (Internal Examination-2)

Name of the faculty : T.NARESH 2022-23

Branch & Section: ECE - A II internal

Course Name: BS LAB Year/Semester: II/I

S.No	HT No.	A+A+CD+MG	T+P+C+R	DDE
Max. Marks ==>		5	5	15
1	21X31A0401	2	2	12
2	21X31A0402	3	3	12
3	21X31A0403	3	2	12
4	21X31A0404	4	3	13
5	21X31A0405	4	3	13
6	21X31A0406	5	4	14
7	21X31A0407	4	3	13
8	21X31A0408	3	3	14
9	21X31A0409	1	1	12
10	21X31A0410	4	4	14
11	21X31A0412	5	4	14
12	21X31A0413	4	3	13
13	21X31A0414	3	3	14
15	21X31A0415	3	3	14
16	21X31A0416	4	3	13
17	21X31A0417	3	3	15
18	21X31A0418	4	5	14
19	21X31A0420	5	5	14
20	21X31A0421	4	4	14
21	21X31A0422	3	4	14
22	21X31A0423	5	4	14
23	21X31A0424	4	3	14
24	21X31A0425	4	3	14
27	21X31A0426	4	4	14
28	21X31A0427	4	4	14
29	21X31A0428	4	4	14
30	21X31A0429	3	3	14
31	21X31A0431	4	4	14
32	21X31A0432	3	4	14
33	21X31A0433	4	3	14
34	21X31A0434	4	3	14
35	21X31A0435	5	4	12
36	21X31A0436	1	1	12
37	21X31A0437	0	1	13
38	22X35A0401	4	4	15
39	22X35A0402	4	4	15
40	22X35A0403	3	3	14
41	22X35A0404	4	4	14
42	22X35A0405	4	3	14
43	22X35A0406	4	3	12

44	22X35A0407	5	4	14
45	22X35A0408	4	5	14
46	22X35A0409	4	5	14
47	22X35A0410	4	5	14
48	22X35A0411	5	4	14
49	22X35A0412	4	4	14
50	22X35A0413	4	5	15
51	22X35A0414	4	4	14
52	22X35A0415	3	4	12
53	22X35A0416	5	5	14
54	22X35A0417	3	3	14
56	22X35A0418	5	4	14
57	22X35A0419	4	4	14
58	22X35A0420	4	5	14
Target set by the faculty / HoD		3.00	3.00	9.00
Number of students performed above the target		50	49	54
Number of students attempted		54	54	54
Percentage of students scored more than target		93%	91%	100%

CO Mapping with Exam Questions:

CO - 1	**y**	**y**	y
CO - 2	**y**	**y**	y
CO - 3	**y**	**y**	y
CO - 4	**y**	**y**	y
CO - 5	**y**	**y**	y
CO - 6	**y**	**y**	y

% Students Scored >Target %	93%	91%	100%

CO Attainment based on Exam Questions:

CO - 1	93%	93%	100%
CO - 2	93%	91%	100%
CO - 3	93%	91%	100%
CO - 4	93%	91%	100%
CO - 5	93%	91%	100%
CO - 6	93%	91%	100%

CO	Intrnal practica	DDE	OverallI	Level
CO-1	93%	100%	96%	3.00
CO-2	92%	100%	96%	3.00
CO-3	92%	100%	96%	3.00
CO-4	92%	100%	96%	3.00
CO-5	92%	100%	96%	3.00
CO-6	92%	100%	96%	3.00

Attainment Level	
1	40%
2	50%
3	60%

Attainment (Internal 1 Examination) = **3.00**

Note :

A+A+CD+MG : AIM+APPARATUS+CIRCUIT DIAGRAM+MODEL GRAPH

T+P+C+R : THEORY+PROCEDURE+CALCULATION+RESULT

DDE : Day to Day Evaluation

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

Department of Electronics and Communication Engineering

Course Outcome Attainment (University Examinations)

Name of the faculty : T.NARESH | Academic Year: 2022-23

Branch & Section: ECE - A | Year / Semester: II/I

Course Name: BS LAB

S.No	Roll Number	Marks Secured
1	21X31A0401	65
2	21X31A0402	67
3	21X31A0403	68
4	21X31A0404	68
5	21X31A0405	67
6	21X31A0406	66
7	21X31A0407	66
8	21X31A0408	67
9	21X31A0409	66
10	21X31A0410	69
11	21X31A0412	65
12	21X31A0413	66
13	21X31A0414	66
14	21X31A0415	68
15	21X31A0416	65
16	21X31A0417	69
17	21X31A0418	66
19	21X31A0420	72
20	21X31A0421	66
21	21X31A0422	69
22	21X31A0423	65
23	21X31A0424	66
24	21X31A0425	69
25	21X31A0426	65
26	21X31A0427	72
27	21X31A0428	65
28	21X31A0429	68
29	21X31A0431	71
30	21X31A0432	66
31	21X31A0433	65
32	21X31A0434	72
33	21X31A0435	66
34	21X31A0436	65
35	21X31A0437	65
Max Marks		75

S.No	Roll Number	Marks Secured
36	22X35A0401	69
37	22X35A0402	68
38	22X35A0403	65
39	22X35A0404	67
40	22X35A0405	66
41	22X35A0406	70
42	22X35A0407	69
43	22X35A0408	72
44	22X35A0409	70
45	22X35A0410	72
46	22X35A0411	71
47	22X35A0412	70
48	22X35A0413	72
49	22X35A0414	66
50	22X35A0415	67
51	22X35A0416	72
52	22X35A0417	71
54	22X35A0418	72
55	22X35A0419	68
56	22X35A0420	72
57		
58		
59		
60		
61		
62		
63		
64		
65		
66		
67		
68		
69		
70		

Class Average mark	65
Number of students performed above the target	34
Number of successful students	54
Percentage of students scored more than target	63%

Attainment Level	% students
1	40%
2	50%
3	60%

Attainment level	**3**

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

Department of Electronics and Communication Engineering

Course Outcome Attainment

Name of the faculty : T.NARESH
Academic Year: 2022-23
Branch & Section: ECE - A
Course Name: BS LAB
Year: II
Semester: I

Course Outcomes	1st Internal Exam	2nd Internal Exam	Internal Exam	University Exam	Attainment Level
CO1	3.00	3.00	3.00	3.00	3.00
CO2	3.00	3.00	3.00	3.00	3.00
CO3	3.00	3.00	3.00	3.00	3.00
CO4	3.00	3.00	3.00	3.00	3.00
CO5	3.00	3.00	3.00	3.00	3.00
CO6	3.00	3.00	3.00	3.00	3.00
Internal & University Attainment:			3.00	3.00	
Weightage			25%	75%	
CO Attainment for the course (Internal, University)			0.75	2.25	
CO Attainment for the course (Direct Method)			3.00		

Overall course attainment level **3.00**

SRI INDU INSTITUTE OF ENGINEERING & TECHNOLOGY

Department of Electronics and Communication Engineering

Program Outcome Attainment (from Course)

Name of Faculty: T.NARESH | Academic Year: 2022-23
Branch & Section: ECE - A | Year: II
Course Name: BS LAB | Semester: I

CO-PO mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	-	-	2	3	-	-	-	-	2	-	-	1	3
CO2	2	3	-	1	2	-	-	-	-	2	-	-	2	1
CO3	2	3	3	2	1	-	-	-	-	2	-	-	3	3
CO4	3	2	3	3	2	-	-	-	-	3	-	-	2	2
CO5	2	3	-	2	2	-	-	-	-	2	-	-	2	1
CO6	2	3	-	2	3	-	-	-	-	3	-	-	2	2
Course	2.3	2.8	2	2	2.2	-	-	-	-	2.3	-	-	2	2

CO	**Course Outcome Attainment**
CO1	3.00
CO2	3.00
CO3	3.00
CO4	3.00
CO5	3.00
CO6	3.00
Overall course attainment level	**3.00**

PO-ATTAINMENT

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO Attainment	**2.30**	**2.80**	**2.00**	**2.00**	**2.20**	**-**	**-**	**-**	**-**	**2.30**	**-**	**-**	**2.00**	**2.00**

CO contribution to PO - 33%, 67%, 100% (Level 1/2/3)