



SRI BHARATHI

ENGINEERING COLLEGE FOR WOMEN

(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai)
Kaikkurichi, Pudukkottai -622 303

www.sbec.edu.in

NAAC DOCUMENTS



Quality Indicator Frame Work

Criterion – 1

CURRICULAR ASPECTS

Submitted by

IQAC

Internal Quality Assurance Cell

Sri Bharathi Engineering College for Women



SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN

(Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai-25)

Kaikkurichi, Pudukkottai, Tamil Nadu – 622 303, India

Criterion 1	Curricular Aspects	100
--------------------	---------------------------	------------

1.1 Curricular Planning and Implementation(20)

1.1.1 The Institution ensures effective curriculum planning and delivery through a well-planned and documented process including Academic calendar and conduct of continuous internal Assessment

Table of contents

S.No	Description
1	Preface of the Course File
2	Review of Course File
3	Work Load
4	Course Plan
5	Content Beyond Syllabus
6	Assignment Question Paper
7	Assignment -Rubrics Based Evaluation
8	Tutorial Question Paper
9	Tutorial -Rubrics Based Evaluation
10	Academic Audit Form
11	Student Feedback on Faculty
12	Internal Assessment Schedule
13	Cycle Test Question Paper
14	Cycle Test Answer Key
15	Cycle Test Sample Answer Sheet
16	Cycle Test Co Based Mark Entry
17	Root Cause Analysis
18	Retest Schedule
19	Retest Sample Question Paper
20	Retest Attendance Sheet
21	Retest Co Based Mark Entry
22	Internal Mark Sheet- Anna University Portal
23	Co Po Attainment



SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN

(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai-25)

Kaikkurichi, Pudukkottai, Tamil Nadu – 622 303, India

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

PREFACE OF THE COURSE FILE

Batch : 2021-2025

Academic Year : 2022-2023/ EVEN

Program : ELECTRICAL AND ELECTRONICS ENGINEERING

Year & Semester : 2nd Year / 4th Semester

Course Code : EE 3403 NBA Course Code: C214

Name of the Course : Measurements and Instrumentation

Faculty in-charge : Mrs.P.Bowrnla AP / EEE

p. Bowri

Signature of the Faculty Incharge


Dr. S. THILAGAVATHI M.E., Ph.D.,
PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kaikkurichi - 622 303, Pudukkottai Dt.


HoD / EEE
HOD EEE
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
KAIKKURICHI,
PUDUKKOTTAI - 622 303.



SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN

(Approved by AICTE, New Delhi and affiliated to Anna University, Chennai)

DEPARTMENT OF ELECTRONICS AND ELECTRONICS ENGINEERING

REVIEW OF COURSE FILE

(to be pasted on the inner side of the file-backside).(#-State Yes/No.)

S.N	Details Date:	R-I-*	R-II-*&	R-III- *&	R-IV- *&\$	R-V- *&\$@
1.	Preface of the course file	Yes				
2.	Vision, Mission, PEOs, POs, PSOs, Blooms taxonomy	Yes				
3.	Subject handlers of yesteryears	Yes				
4.	Timetable/Workload of the staff – Distribution of teaching load – Roles and Responsibilities	Yes				
5.	Syllabus signed by staff & HoD	Yes				
6.	Lecture Schedule signed by staff & HoD	Yes				
7.	Course Committee meeting circular and minutes	NA				
8.	Identification of Curricular gap and Content Beyond the syllabus	Yes				
9.	Self-study topics	Yes				
10.	Previous AU Question papers	Yes				
11.	Unit wise Q&A and Objective type questions	Yes				
12.	Unit wise course material	Yes				
13.	Assignment question paper with sample answer sheets and mark entry		Yes			
14.	Tutorial question paper with key and mark entry		Yes			
15.	Class test/IA test Q Paper with Key, sample answer papers and mark entry		Yes			
16.	IA Test- result analysis-CAP-evidence-root cause analysis.		Yes			
17.	Retest –Q paper-Attendance-marks			Yes		
18.	AU Web portal entry sheet			Yes		
19.	Very poor performance in first two tests-action taken.-communication to parents-evidence			Yes		
20.	Absence for two tests-action taken-communication to parents-evidence.			—		
21.	Indiscipline of student reported, if any			—		
22.	Special class/coaching class/remedial class/attendance-CAP			Yes		
23.	Conduct of Seminar, Quizzes - proof			Yes		
24.	Content beyond the syllabus - proof			Yes		
25.	Student feedback on faculty				Yes	
26.	Course end survey				Yes	
27.	Internal Assessment sheet				Yes	
28.	AU question paper with students feedback				Yes	
29.	Discrepancy of the question paper and correspondence, if any				Yes	
30.	AU result analysis-Details of arrear students.					Yes
31.	AU grade sheet					Yes
32.	CO – PO & PSO attainment sheet					Yes
	Signature of Course handling faculty	P.Boin	P.Boin	P.Boin	P.Boin	P.Boin
	Signature of HoD HOD EEE	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]



SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN

Kaikkurichi, Pudukkottai- 622 303

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

INDIVIDUAL STAFF WORKLOAD (2022-2023) EVEN SEMESTER

Date:19.1.2023

S.NO	NAME OF THE STAFF	SUBJECTS HANDLED	YEAR & DEPT	HOURS ALLOCATED	TOTAL HOURS
1.	Ms.B.Priya	EE8691-Embedded Systems	III EEE	5	18
		EE8018- Microcontroller Based System Design	IV EEE	5	
		EE3251- Electric Circuit Analysis	I EEE	5	
		EE8811- Project Work	IV EEE	3	
2.	Ms.K.A.Muthulakshmi	EC3451 -Linear Integrated Circuits	II/ ECE	4	13
		EE3412- Linear and Digital Circuits Laboratory	II EEE	3	
		EC3462 -Linear Integrated Circuits Laboratory	II/ECE	3	
		EE8611- Mini Project	III EEE	3	
3.	Mr.A.Abdul Baseeth	EE8005- Special Electrical Machines	III EEE	4	13
		EE8661- Power Electronics and Drives Laboratory	III EEE	3	
		EE3411 -Electrical Machines Laboratory - II	II EEE	3	
		GE3271- Engineering Practices Laboratory	I SEC B	3	
4.	Ms.S.Raga Brintha	EE8601-Solid State Drives	III EEE	5	13
		GE3271- Engineering Practices Laboratory	I SEC C	3	
		GE3271- Engineering Practices Laboratory	I SEC A	3	
		EE3271- Electric Circuits Laboratory	I EEE	2	
5.	Ms.C.Nanthini	EE8602- Protection and switchgear	III EEE	5	11
		GE3271- Engineering Practices Laboratory	I SEC B	3	
		GE3271- Engineering Practices Laboratory	I SEC C	3	
6.	Mr.T.Parthiban	EE3405- Electrical Machines - II	II EEE	5	15
		EE3411 -Electrical Machines Laboratory - II	II EEE	3	
		BE3254- Electrical and Instrumentation Engineering	I ECE	4	
		BE3272-Basic Electrical, Electronics and Instrumentation Engineering Laboratory	I CIVIL	3	

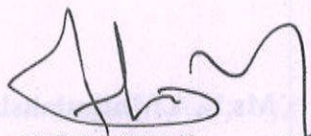
Dr. S.THILAGAVATHI M.E., Ph.D.,
PRINCIPAL

SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN


Kaikkurichi - 622 303 Pudukkottai Dt

7.	Mrs.P.Bowrnila	EE3403- Measurements and Instrumentation	II EEE	4	13
		EE8661- Power Electronics and Drives Laboratory	III EEE	3	
		GE3271- Engineering Practices Laboratory	I SEC A	3	
		EE3271- Electric Circuits Laboratory	I EEE	3	
8.	Ms.A.Thaiyal Nayaki	EE3401- Transmission and Distribution	II EEE	4	10
		EE8611- Mini Project	III EEE	3	
		BE3272-Basic Electrical, Electronics and Instrumentation Engineering Laboratory	I CIVIL	3	


 HOD
 HOD EEE
 SRI BHARATHI ENGINEERING
 COLLEGE FOR WOMEN
 KAIKKURICHI,
 PUDUKKOTTAI - 622 303.


 PRINCIPAL
 PRINCIPAL
 SRI BHARATHI ENGINEERING
 COLLEGE FOR WOMEN
 KAIKKURICHI - 622 303.
 PUDUKKOTTAI DISTRICT


 Dr. S.THILAGAVATHI M.E., Ph.D.,
 PRINCIPAL
 SRI BHARATHI ENGINEERING
 COLLEGE FOR WOMEN
 Kaikkurchi - 622 303, Pudukkottai Dt.


 DR. S.THILAGAVATHI M.E., Ph.D.
 PRINCIPAL
 SRI BHARATHI ENGINEERING
 COLLEGE FOR WOMEN
 Kaikkurchi - 622 303, Pudukkottai Dt.



SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN
(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai-25)
KAIKKURUCHI, PUDUKKOTTAI
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

COURSE PLAN

Subject code :EE3403

Subject Name: MEASUREMENTS AND INSTRUMENTATION

Staff name : P.BOWRNILA

Branch/ Year/ sem: BE- EEE/ IV

Batch : 2021-2025

Academic Year : 2022-2023

COURSE OBJECTIVE

- To understand the basic functional elements of instrumentation
- To describe the fundamentals of electrical and electronic instruments
- To compare various measurement techniques
- To describe the operation of various storage and display devices
- To understand the operation of various transducers and the data acquisition systems

TEXT BOOKS:

- T1. A.K. Sawhney, 'A Course in Electrical & Electronic Measurements & Instrumentation', Dhanpat Rai
T2. J. B. Gupta, 'A Course in Electronic and Electrical Measurements', S. K. Kataria & Sons, Delhi, 2013.
T3. Doebelin E.O. and Manik D.N., Measurement Systems – Applications and Design, Special Indian Edition, McGraw Hill Education Pvt. Ltd., 2007

REFERENCES:

- R1. H.S. Kalsi, 'Electronic Instrumentation', McGraw Hill, III Edition 2010.
R2. D.V.S. Murthy, 'Transducers and Instrumentation', Prentice Hall of India Pvt Ltd, 2015.
R3. David Bell, 'Electronic Instrumentation & Measurements', Oxford University Press, 2013.
R4. Martin Reissland, 'Electrical Measurements', New Age International (P) Ltd., Delhi, 2001.
R5. Alan. S. Morris, Principles of Measurements and Instrumentation, 2nd Edition, Prentice Hall of India, 2003.
R6. U.A. Bakshi, A.V. Bakshi, 'Measurements and Instrumentation', Technical publications.

WEB RESOURCES

W1: <https://archive.nptel.ac.in/courses/108/105/108105153/>

W2: <https://www.youtube.com/watch?v=GaYUyG2DhSk>

W3: <https://www.youtube.com/watch?v=d8q6DzQ7CpU>

W4: https://www.youtube.com/watch?v=jLQauZP2e_4

W5: <https://www.youtube.com/watch?v=q8UuRkOO9A0>

W6: <https://archive.nptel.ac.in/courses/106/106/106106220/>

TEACHING METHODOLOGIES:

- BB - BLACK BOARD
- PPT - POWER POINT PRESENTATION
- VS - VIDEOS

Dr. S. THILAGAVATHI M.E., Ph.D.,
PRINCIPAL

SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kaikkuruchi - 622 303, Pudukkottai Dt.



SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN
(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai-25)
KAIKKURUCHI, PUDUKKOTTAI
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

EE3403

MEASUREMENTS AND INSTRUMENTATION

L T P C

3 0 0 3

UNIT I INTRODUCTION **9**

Instruments: classification, applications – Elements of a generalized measurement system - Static and dynamic characteristics - Errors in measurement -Statistical evaluation of measurement data.

UNIT II ELECTRICAL AND ELECTRONIC INSTRUMENTS **9**

Classification of instruments – moving coil and moving iron meters – Induction type, dynamometer type watt meters – Energy meter – Megger – Instrument transformers (CT & PT).

UNIT III AC/DC BRIDGES AND INSTRUMENTATION AMPLIFIERS **9**

Wheatstone bridge, Kelvin double bridge - Maxwell, Hay, Wien and Schering bridges – Errors and compensation in A.C. bridges - Instrumentation Amplifiers.

UNIT IV TRANSDUCERS FOR MEASUREMENT OF NON- ELECTRICAL PARAMETERS **9**

Classification of transducers – Measurement of pressure, temperature, displacement, flow, angular velocity – Digital transducers – Smart Sensors.

UNIT V DIGITAL INSTRUMENTATION **9**

A/D converters: types and characteristics — Sampling, Errors- Measurement of voltage, Current, frequency and phase - D/A converters: types and characteristics- DSO- Data Loggers – Basics of PLC programming and Introduction to Virtual Instrumentation - Instrument standards.

TOTAL : 45 PERIODS

P. Boon

FACULTY INCHARGE

[Signature]

**HOD
HOD EEE**

**SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
KAIKKURUCHI
PUDUKKOTTAI - 622 303
PUDUKKOTTAI - 622 303**

[Signature]
**Dr. S. THILAGAVATHI M.E., Ph.D.,
PRINCIPAL**

**SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kaikkuruchi - 622 303, Pudukkottai Dt.**



SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN
(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai-25)
KAIKKURUCHI, PUDUKKOTTAI
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Topic No	Topic Name	Books For reference	Page No	Teaching Methodology	No of period required	Cumulative periods
UNIT I INTRODUCTION						(9)
1.	Functional elements of an instrument	R6	1.3	BB	1	1
2.	Static and dynamic characteristics	R6	1.8,1.21	BB	1	2
3.	Errors in measurement	R6	1.54	BB	1	3
4.	Statistical evaluation of measurement data	R6	1.58	BB	1	4
5.	Standards and calibration	R6	1.50	BB	1	5
6.	Principle and types of analog voltmeters	R6	2.23	BB	1	6
7.	Digital voltmeters	R6	2.23	PPT/VS	1	7
8.	ammeters	R6	2.29	BB	2	9
LEARNING OUTCOME:						
At the end of unit , the students will be able to						
<ul style="list-style-type: none">• Gain knowledge on instruments.• Comparing the operation of various types of voltmeters and ammeters.						
UNIT II ELECTRICAL AND ELECTRONIC INSTRUMENTS						(9)
9.	Principle and types of multi meters	R6	2.87	BB	1	10
10.	Single phase wattmeter	R6	2.49	BB	1	11
11.	Three phase wattmeter and energy meters	R6	2.59	BB	1	12
12.	Magnetic measurements	R6	2.93	BB	1	13
13.	Determination of B-H curve	R6	2.100	PPT/VS	1	14
14.	measurements of iron loss	R6	2.108	BB	1	15
15.	Instrument transformers	R6	2.119	BB	1	16
16.	Instruments for measurement of frequency	R6	2.142	BB	1	17
17.	Instruments for measurement of phase	R6	2.156	BB	1	18
UNIT – III AC/DC BRIDGES AND INSTRUMENTATION AMPLIFIERS						(9)
18.	D.C potentiometers	R6	3.3	BB	1	19
19.	Wheat stone, Kelvin bridge	R6	4.3	BB	1	20
20.	Kelvin Double bridge, Maxwell bridge	R6	4.43	BB	1	21
21.	Anderson and Schering bridges	R6	4.43	BB	1	22
22.	transformer ratio bridges, self-balancing bridges	R6	4.68,4.78	BB	1	23
23.	Interference & screening	R6	4.82	PPT/VS	1	24
24.	Multiple earth and earth loops	R6	4.83	BB	1	25



SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN
 (Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai-25)
KAIKKURUCHI, PUDUKKOTTAI
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

25.	Electrostatic and electromagnetic Interference	R6	4.84	BB	1	26
26.	Grounding techniques	R6	4.87	BB	1	27
UNIT IV TRANSDUCERS FOR MEASUREMENT OF NON-ELECTRICAL PARAMETERS						(9)
27.	Classification of transducers	R6	5.6	BB	1	28
28.	Measurement of pressure	R6	5.7	BB	1	29
29.	Measurement of temperature	R6	5.21	BB	1	30
30.	Measurement of flow	R6	5.27	BB	1	31
31.	Measurement of angular velocity	R6	5.35	BB	1	32
32.	Digital transducers	R6	5.63	BB	1	33
33.	Types of sensors	R6	5.70	BB	1	34
34.	Smart sensors	R6	5.74	PPT/VS	1	35
35.	Applications	R6	7.12	BB	1	36

LEARNING OUTCOME:

At the end of unit , the students will be able to

- Representing the concept of storage devices.
- Gain knowledge about various types of display devices.

UNIT V DIGITAL INSTRUMENTATION

(9)

36.	A/Dconverters,Types and characteristics	R6	6.3	BB	1	37
37.	Sampling errors	R6	6.9	BB	1	38
38.	Measurements of voltage	R6	6.11	BB	1	39
39.	Measurements current,frequency and phase	R6	9.32	BB	1	40
40.	D/A converters:Types and characteristics	R6	6.51	BB	1	41
41.	DSO :Data loggers	R6	6.70	PPT/VS	1	42
42.	Basics of PLC Programming	R6	6.81	BB	1	43
43.	Introduction to virtual instrumentation	R6	7.2	BB	1	44
44.	Instrument standards	R6	7.45	BB	1	45
45.	OT-Cyber Security(CBS)	--	--	PPT	3	48

LEARNING OUTCOME:

At the end of unit , the students will be able to

- Explaining the various types of transducers.
- Gain knowledge about data acquisition systems.

COURSE OUTCOME

At the end of the course, the student should be able to:

- C214.1: Acquire knowledge on Basic functional elements of instrumentation.
- C214.2: Explaining the concepts of Fundamentals of electrical and electronic instruments.
- C214.3: Compare between various measurement techniques.
- C214.4: Acquire knowledge on Various storage and display devices
- C214.5: Explaining the concepts Various transducers and the data acquisition systems
- C214.6: Model and differentiating the electrical and electronic Instruments and understand the operational features of display Devices and Data Acquisition System.



SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN
(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai-25)
KAIKKURUCHI, PUDUKKOTTAI
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

CONTENT BEYOND THE SYLLABUS
OT-Cyber Security

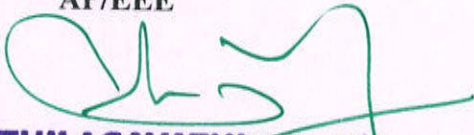
ASSESSMENT DETAILS

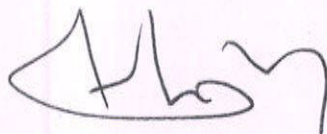
ASSESSMENT NUMBER	I	II
UNIT	1 st , 2 nd & 3 rd (Half) Units	3(Half), 4 th & 5 th units

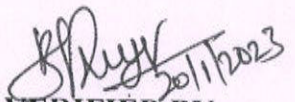
ASSIGNMENT DETAILS	I	II	III	IV	V	VI	VII	VIII
DATE OF SUBMISSION	13.02.23	24.02.23	10.03.23	18.03.23	24.03.23	10.04.23	19.04.23	26.04.23

ASSIGNMENTNUMBER	DESCRIPTIVE QUESTIONS/TOPIC
I	Zero order instrument
II	Electro dynamo meter type watt meter, Problem
III	Instrument transformers(CT&PT)
IV	Moving coil and moving iron instruments
V	AC/DC Bridges
VI	Instrumentation amplifiers
VII	Clasification of transducers, Data loggers, Basics of PLC programming
VIII	Smart sensors

P. Bowni
PREPARED BY
P.BOWNILA
AP/EEE


Dr. S. THILAGAVATHI M.E., Ph.D.,
PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN


APPROVED
BY *20/01/23*
PRINCIPAL
PRINCIPAL


VERIFIED BY
B.PRIYA
HOD/EEE
HOD/EEE
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
KAIKKURUCHI,
PUDUKKOTTAI - 622 303.

SRI BHARATHI ENGINEERING



SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN

(Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai-25)
Kaikkurichi, Pudukkottai, Tamil Nadu – 622 303, India

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Identification of Curricular Gap & Content Beyond Syllabus(CBS)

Name of the Faculty :P.BOWRNILA
Degree & Program:B.E. /EEE

Course Code & Name:EE3403
Semester : II Academic Year: 2022 -2023 /EVEN

I. Mapping of Course Outcomes with POs & PSOs.(before CBS)

Table.1 Mapping of COs, C, PSOs with POs - before CBS.

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C214.1	3	3	2	2	-	2	-	2	-	2	-	2	3	1	1
C214.2	3	3	2	2	-	-	-	-	-	2	-	2	3	1	1
C214.3	3	3	2	2	-	2	-	-	-	2	-	2	3	1	1
C214.4	3	3	2	2	-	-	-	2	-	2	-	-	3	1	1
C214.5	3	3	2	2	-	-	-	-	-	2	-	-	3	1	1
C214.6	3	3	2	2	-	-	-	-	-	2	-	-	3	1	1
Avg	3	3	2	2	-	2	-	2	-	2	-	2	3	1	1

II. Identification of content beyond syllabus.

Table.2 Identification of content beyond syllabus

Details of Content Beyond Syllabus(CBS) added	POs strengthened/ vacant filled	CO/Unit
OT - Cyber Security	PO6(2),PO7(2) Vacant filled	CO4 & CO5/ IV & V

III. Mapping of course outcomes with POs&PSOs with Pos-(After CBS)

Table.3 Mapping of COs, C, PSOs with POs- after CBS.

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C214.1	3	3	2	2	-	2	-	2	-	2	-	2	3	1	1
C214.2	3	3	2	2	-	-	-	-	-	2	-	2	3	1	1
C214.3	3	3	2	2	-	2	-	-	-	2	-	2	3	1	1
C214.4	3	3	2	2	-	*2	*2	2	-	2	-	-	3	1	1
C214.5	3	3	2	2	-	*2	*2	-	-	2	-	-	3	1	1
C214.6	3	3	2	2	-	-	-	-	-	2	-	2	3	1	1
Avg	3	3	2	2	-	2	*2	2	-	2	-	2	3	1	1

P. Boin

Signature of the Faculty

Dr. S. THILAGAVATHI M.E., Ph.D.,
PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kaikkurichi - 622 303, Pudukkottai Dt.

HoD/EEE
HOD EEE
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
KAIKKURICHI,
PUDUKKOTTAI - 622 303.



SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN

(Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai-25)

Kaikkurichi, Pudukkottai, Tamil Nadu – 622 303, India

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Assignment Question Paper

Name of the Student : A.GOKULAPRAVEENA

AU Register Number: 912621105001

Assignment – 06			Date of Issue:	10.04.2023	Marks	10
Course code	EE3403	Course Title	Measurements and instrumentation			
Year	II	Semester/Section	IV	Date of Submission:	13.04.2023	

Q.No	Questions	CO
1.	Briefly explain the Instrumentation amplifiers .	C214.4
2.	Give the application of instrumentation amplifier.	C214.4

P. Bowri (Mrs. P. BOWRNILA)

Name and Signature of the Faculty Incharge

[Handwritten Signature]

HoD/EEE
HOD EEE

SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
KAIKKURICHI,
PUDUKKOTTAI - 622 303.

[Handwritten Signature]

Dr. S. THILAGAVATHI M.E., Ph.D.,
PRINCIPAL

SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kaikkurichi - 622 303, Pudukkottai Dt.



SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN

(Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai-25)

Kaikkurichi, Pudukkottai, Tamil Nadu – 622 303, India

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Assignment Answer Sheet

Name of the Student : A.GOKULAPRAVEENA

AU Register Number: 912621105001

Assignment – 06			Date of Issue:	10.04.2023	Marks	10
Course code	EE3403	Course Title	Measurements and instrumentation			
Year	II	Semester/Section	IV	Date of Submission:	13.04.2023	

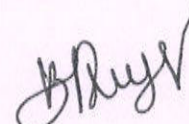
Q.No	Questions	CO
1	Briefly explain the Instrumentation amplifiers .	C214.4
2	Give the application of instrumentation amplifier.	C214.4

Mark Allocation

Rubrics	Marks Allocated	Marks obtained
Content Quality	6	5
Presentation Quality	2	2
Timely submission	2	2
Total marks	10	09

P. Bovi (Mrs. P. BOURNILA)

Name and Signature of the Faculty Incharge



HoD/EEE

HOD EEE

SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
KAIKKURICHI,
PUDUKKOTTAI - 622 303


Dr. S. THILAGAVATHI M.E., Ph.D.,
PRINCIPAL

SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kaikkurichi - 622 303, Pudukkottai Dt.



SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN

(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai-25)

Kaikkurichi, Pudukkottai, Tamil Nadu – 622 303, India

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Tutorial Question Paper

Tutorial – 03			Date of Issue:	13.04.23	Marks	10
Course code	EE3401	Course Title	TRANSMISSION AND DISTRIBUTION			
Year	II	Semester/Section	IV	Date of Submission:	18.04.23	

Q. No	Questions	CO
1	An overhead line at a river crossing is supported from two towers of heights 30 metres and 90 metres above water level with a span of 300 metres. The weight of the conductor is 1 kg/metre and the working tension is 2000 kg. Determine the clearance between the conductor and the water level mid-way between the towers.	C212.4
2	A transmission line has a span of 275m between level supports. The conductor has an effective diameter of 1.96cm and weighs 0.865kg/m. If the conductor has ice coating of radial thickness 1.27cm and is subjected to a wind pressure of 3.9gm/sq.cm of projected area. The ultimate strength of the conductor is 8060kg. Calculate the sag if the factor of safety is 2 and weight of l.c.c of ice is 0.91gm.	C212.4
3	Each line of 3 phase system is suspended by the string of 3 identical insulators of self-capacitance 'C' F. The shunt capacitance of connecting metal work of each insulator is 0.2C to earth and 0.1C to line. Calculate the string efficiency of the system if a guard ring increase the capacitance to the line of metal work of the lowest insulator to 0.3C.	C212.4

Thil (Ms.A. Thailyal Nayagi)
Name and Signature of the Faculty Incharge

[Signature]

HoD/EEE
- HOD EEE

SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
KAIKKURICHI,
PUDUKKOTTAI - 622 303.

[Signature]
Dr. S. THILAGAVATHI M.E., Ph.D.,
PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kaikkurchi - 622 303, Pudukkottai Dt.



SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN

(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai-25)
Kaikkurichi, Pudukkottai, Tamil Nadu – 622 303, India

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Tutorial Answer Sheet

Name of the Student: S.SUMITHRA

AU Register Number: 912621105004

Tutorial – 03		Date of Issue:	13.04.23	Marks	10
Course code	EE3401	Course Title	TRANSMISSION AND DISTRIBUTION		
Year	II	Semester/Section	IV	Date of Submission:	18.04.23

Q.No	Questions	CO
1	An overhead line at a river crossing is supported from two towers of heights 30 metres and 90 metres above water level with a span of 300 metres. The weight of the conductor is 1 kg/metre and the working tension is 2000 kg. Determine the clearance between the conductor and the water level mid-way between the towers.	C212.4
2	A transmission line has a span of 275m between level supports. The conductor has an effective diameter of 1.96cm and weighs 0.865kg/m. If the conductor has ice coating of radial thickness 1.27cm and is subjected to a wind pressure of 3.9gm/sq.cm of projected area. The ultimate strength of the conductor is 8060kg. Calculate the sag if the factor of safety is 2 and weight of l.c.c of ice is 0.91gm.	C212.4
3	Each line of 3 phase system is suspended by the string of 3 identical insulators of self-capacitance 'C' F. The shunt capacitance of connecting metal work of each insulator is 0.2C to earth and 0.1C to line. Calculate the string efficiency of the system if a guard ring increase the capacitance to the line of metal work of the lowest insulator to 0.3C.	C212.4

Mark Allocation

Rubrics	Marks Allocated	Marks obtained
Problem solving approach	6	5
Correctness of Answer	2	2
Timely submission	2	2
Total marks	10	9

This (Mrs. A. Thairya / Nayagi)

Name and Signature of the Faculty Incharge

Dr. S. THILAGAVATHI M.E., Ph.D.,

PRINCIPAL

SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN

Kaikkurichi - 622 303, Pudukkottai Dt.

HoD/EEE
HOD EEE

SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
KAIKKURICHI,

PUDUKKOTTAI - 622 303



SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN

(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai-25)

Kaikkurichi, Pudukkottai, Tamil Nadu – 622 303, India

IQAC Academic Audit Form

ACADEMIC YEAR: 2022-2023 EVEN SEMESTER

Name of Department :	EEE	Year / Sem :	II/IV	No. of Students Registered :	02
Details of Examination :	CT-1 / CT-2 / CT-3 / Model Test				

S.No.	Course Code	List of Reg.No Verified	Course Log Book Verified (Y/N)	Course File Verified (Y/N)	No of students passed	No of Absentees	No of Failures	Pass %	Remarks
1.	GE3451	Environmental sciences and Sustainability	Y	Y	2	NIL	NIL	100%	-
2.	EE3401	Transmission and Distribution	Y	Y	2	NIL	NIL	100%	-
3.	EE3402	Linear Integrated Circuits	Y	Y	2	NIL	NIL	100%	-
4.	EE3403	Measurements and Instrumentation	Y	Y	2	NIL	NIL	100%	-
5.	EE3404	Microprocessor and Microcontroller	Y	Y	2	NIL	NIL	100%	-
6.	EE3405	Electrical Machines - II	Y	Y	2	NIL	NIL	100%	-

Verified by

External Member Name and Signature:

P. Dennis Flora, AP/CIVIL

Internal Member Name and Signature:

T. Parthiban, AP/EEE

Overall Remarks:

Try to maintain the same result in Au Exam.

HoD/ EEE
HOD EEE

SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
KAIKKURICHI,
PUDUKKOTTAI - 622 303.

IQAC Coordinator

Dr. S. THILAGAVATHI M.E., Ph.D.,
PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kaikkurichi - 622 303, Pudukkottai Dt.

Principal

PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
KAIKKURICHI - 622 303.
PUDUKKOTTAI DISTRICT



SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN
(Approved by AICTE, and Affiliated to Anna University, Chennai, India)
Kaikkurichi, Pudukkottai – 622 303

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

STUDENT FEEDBACK ON FACULTY

S.NO.	DESCRIPTION	SCORED OUT OF 4	SCORED OUT OF 100
1.	The Syllabus coverage as prescribed by University.	3	63
2.	Technical knowledge of the teacher.	3	75
3.	Teacher's communication skill.	3	63
4.	Regularity in taking classes.	3	75
5.	Helping the Students in conducting the experiment through set of instructions and Demonstrations.	3	63
6.	Tendency of inviting opinion and questions on subject matter from students.	3	75
7.	Knowledge of the Teacher in latest development of field.	3	63
8.	Perfectness of Valuation.	3	75
OVERALL SCORE		3	69


Dr. S. THILAGAVATHI M.E., Ph.D.,
PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kaikkurichi - 622 303, Pudukkottai Dt.

REPORT SHEET

S.NO	REG.NO	NAME	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
1.	912621105001	GOKULA PRAVEENA A	2	3	2	3	3	3	2	3
2.	912621105004	SUMITHRA S	3	3	3	3	2	3	3	3
AVERAGE			3	3	3	3	3	3	3	3
PERCENTAGE			63	75	63	75	63	75	63	75

EXCELLENT	VERY GOOD	GOOD	AVERAGE	POOR
4	3	2	1	0

P. Boin

Signature of the Faculty

[Signature]
HoD/EEE


Dr. S. THILAGAVATHI M.E., Ph.D.,
PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kaikkurchi - 622 393, Pudukkottai Dt.



**SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN
KAIKKURICHI, PUDUKKOTTAI – 622 303.**

Circular

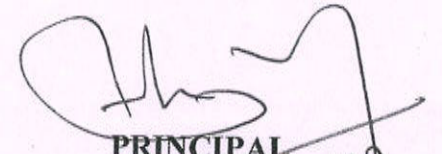
Date: 28.04.2023

The Second cycle test will be conducted from 05.05.2023 to 12.05.2023 for the IV semester (II year) B.E students for 100 marks as per the time table given below. Students are directed to prepare well and score good marks.

Date	12.45 pm -3.45 pm
05-05-2023	CE3401- Applied Hydraulics Engineering (CIVIL) CS3491- Artificial Intelligence and Machine Learning (CSE) EE3402- Linear Integrated Circuits(EEE) EC3491- Communication Systems(ECE)
06-05-2023	GE3451- Environmental Science and Sustainability(CIVIL/CSE/EEE/ECE)
08-05-2023	CE3405- Highway and Railway Engineering (CIVIL) CS3401- Algorithms (CSE) EE3403- Measurements & Instruments(EEE) EC3492- Digital Signal Processing(ECE)
09-05-2023	CE3404 Soil Mechanics (CIVIL) CS3492- Database Management Systems (CSE) EE3404- Microprocessor and Microcontroller(EEE) EC3451- Linear Integrated Circuits(ECE)
10-05-2023	CE3402 -Strength Of Materials (CIVIL) CS3452- Theory of Computation(CSE) EE3401- Transmission and Distribution(EEE) EC3452- Electromagnetic Fields(ECE)
12-05-2023	CE3403- Concrete Technology (CIVIL) CS3451- Introduction to Operating Systems (CSE) EE3405- Electrical Machines-II(EEE) EC3401- Network and Security(ECE)

Cc:

- All II year B.E Classes
- All faculty
- Exam cell
- IQAC Co-ordinator
- Notice Board
- Office file


PRINCIPAL
28/04/23


Dr. S.THILAGAVATHI M.E., Ph.D.,
PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kakkurichi - 622 303, Pudukkottai Dt.

14b	Categorize the measurement of pressure and temperature.	C214.5	K3
15a	Justify the different principles of working of capacitive transducers.	C214.5	K5
OR			
15b	Discuss the principle of operation of piezo electric transducer.	C214.5	K3
PART C (Answer all the Questions 1 x 15 = 15 Marks)			
16a	Illustrate in detail about digital instrumentation.	C214.6	K2
OR			
16b	Schedule the types of ADC and its applications.	C214.6	K3

P. Bovi

Course Faculty

(Name / Sign / Date)

(Mrs. P. BOWENILA)

B. Priya
31/5/23

HoD

(Name / Sign / Date)

(Mrs. B. Priya)
HOD EEE
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
KAIKKURICHI,
PUDUKKOTTAI - 622 303.

Dr. S. THILAGAVATHI M.E., Ph.D.,
PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kaikkurichi - 622 303, Pudukkottai Dt.

Dr. S. THILAGAVATHI M.E., Ph.D.
PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kaikkurichi - 622 303 Pudukkottai Dt.

Cycle test - II.

EE3403 Measurements

and Instrumentation

Key Answer.

Part A

1. * One of the advantages of using a bridge circuit to measure resistance is that the voltage of the power source is irrelevant.
* The resistance of the meter wire is known and can be used to calculate the resistance of the unknown.
2. In the unbalanced condition of the bridge, when current flows, it causes the pointer of galvanometer to get deflected. Thus, the deflection rate is the function of sensitivity.
3. A Maxwell bridge is a modification to a Wheatstone bridge used to measure an unknown inductance in terms of calibrated resistance and inductance, or resistance and capacitance.
4. Wein's bridge is used for measurement of capacitance, resistance and frequency.


Dr. S. THILAGAVATHI M.E., Ph.D.,
PRINCIPAL
SRIBHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kaikkurchi - 622 303, Pudukkottai Dt.

5. Data loggers are electronic devices which automatically monitor and record environmental parameters over time, allowing conditions to be measured, documented, analysed and validated.

6. Hay's Bridge

* It is used to determine the inductance of an inductor with a high Q factor.

* It's simple.

Maxwell's Bridge

* It is only appropriate for measuring the values of inductors with a medium quality factor.

* It is complicated.

7. A Transducer is an electronic device that converts energy from one form to another.

8. * Attenuation can be done easily.
* Mass inactivity effects can be reduced.
* Friction effects can be reduced.
* The output can be specified & recorded remotely at a distance from the sensing medium.

9.
 * Active Transducers
 * Passive Transducers

10.
 * Analog transducer converts input signal into output signal, which is a continuous function of time such as thermistor, strain gauge, LVDT, thermo couple etc.
 * Digital transducer converts input signal into the output signal of the form of pulse e.g. It gives discrete output.

Part - B

11. a) Kelvin double Bridge?

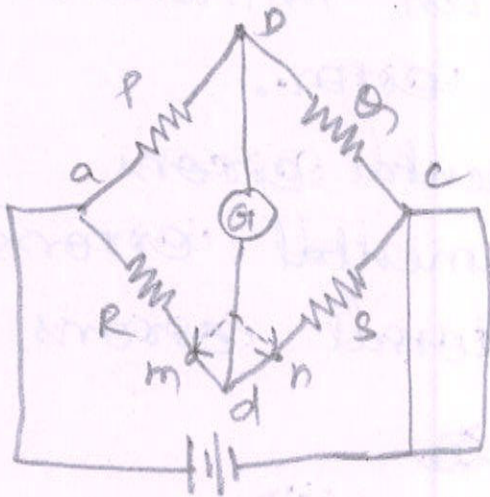


Diagram = 4

Theory = 5

Equation = 4

Dr. S. THILAGAVATHI M.E., Ph.D.,
 PRINCIPAL

SRI BHARATHI ENGINEERING
 COLLEGE FOR WOMEN

Kaikkurchi - 622 303, Pudukkottai Dt.

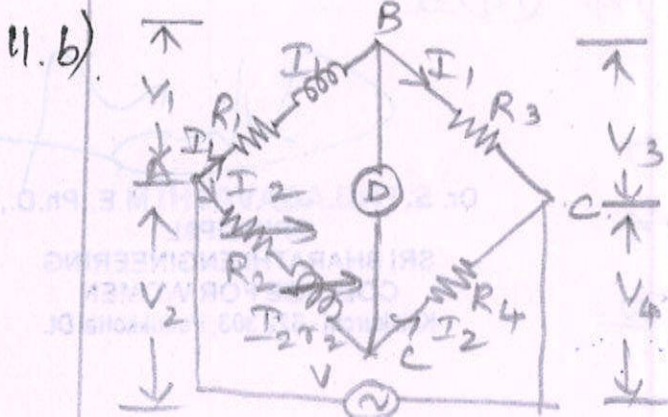


Diagram = 4

Theory = 5

Equation = 4

12) a)

$$Z_1 = R_1 + j\omega L_1$$

$$Z_2 = R_2 + s_2 + j\omega L_2$$

$$Z_3 = R_3$$

$$Z_4 = R_4$$

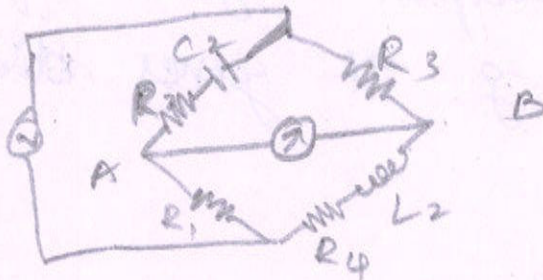
$$Z_1 Z_4 = Z_2 Z_3$$

$$L_1 = L_2 \times \frac{R_3}{R_4}$$

Phasor } = 4
Diagram } 2

Derivation = 9

12) b)



Explanation = 6

Equation = 4

Diagram = 3

13) a)

A constant uniform deviation of the operation of an instrument is known as a systematic error.

- Types :-
- (i) Instrumental errors
 - (ii) Environmental errors.
 - (iii) Observational errors.

Explanation = 3

Types = (i) 4 (ii) 4 (iii) 3

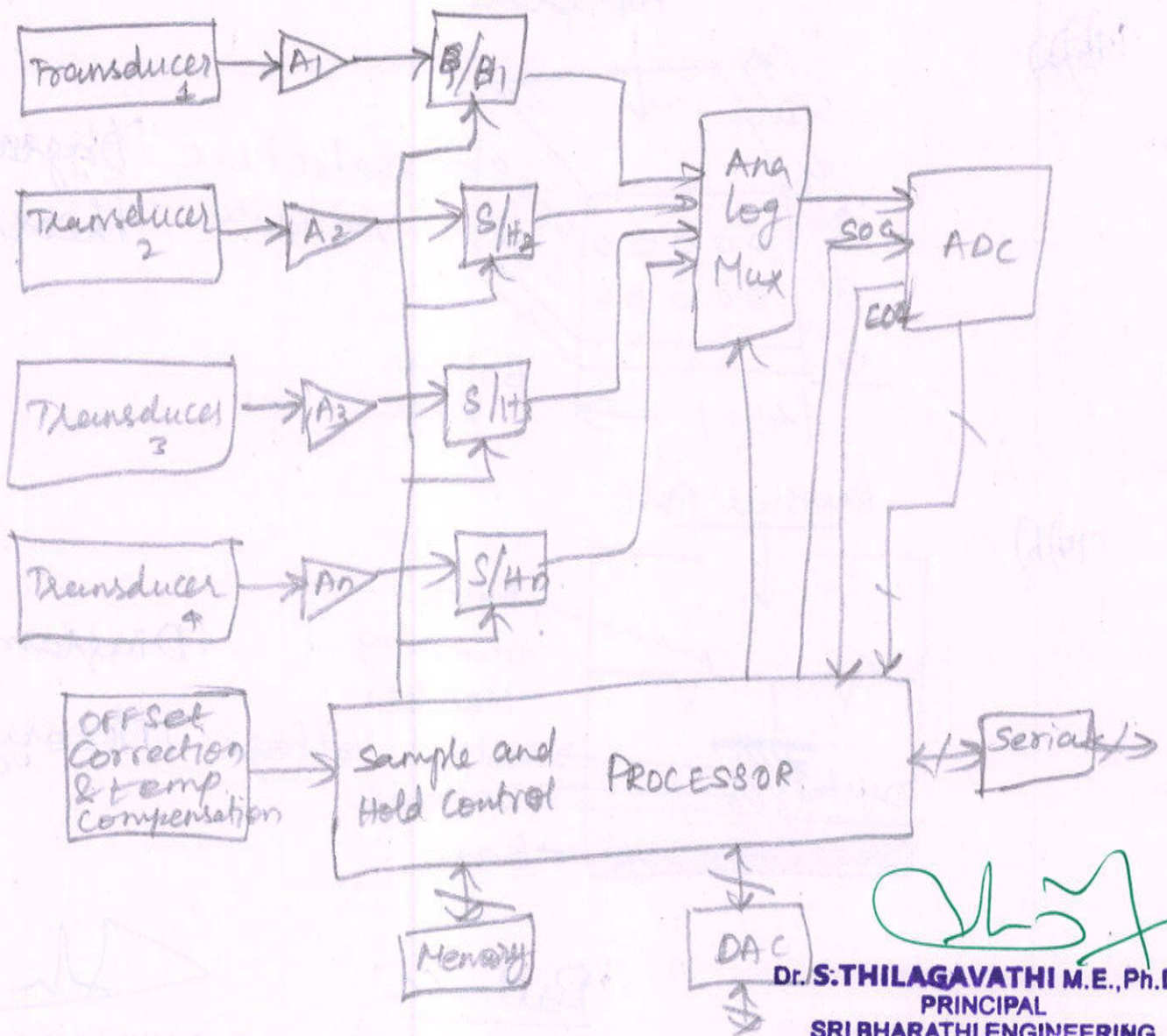
13) b)

Explanation = 7

Diagram = 4

Applications = 2

Dr. S. THILAGAVATHI M.E., Ph.D.,
PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kaikkurchi - 622 303, Pudukkottai Dt.



Handwritten signature

Dr. S. THILAGAVATHI M.E., Ph.D.
 PRINCIPAL
 SRI BHARATHI ENGINEERING
 COLLEGE FOR WOMEN
 Kalkkurchi - 622 303, Pudukkottai Dt.
 4 M

- 4) a) (i) * Active Transducers
 * Passive Transducers

According to transduction principle

- (ii) * Analog Transducers 3 M
 * Digital Transducers
- (iii) * Primary Transducers 3 M
 * Secondary Transducers
- (iv) * Transducer 3 M
 * Inverse Transducers

4) b) (i) Pressure gauge. (7 M)

(ii) Thermometers (6 M)

15) a)

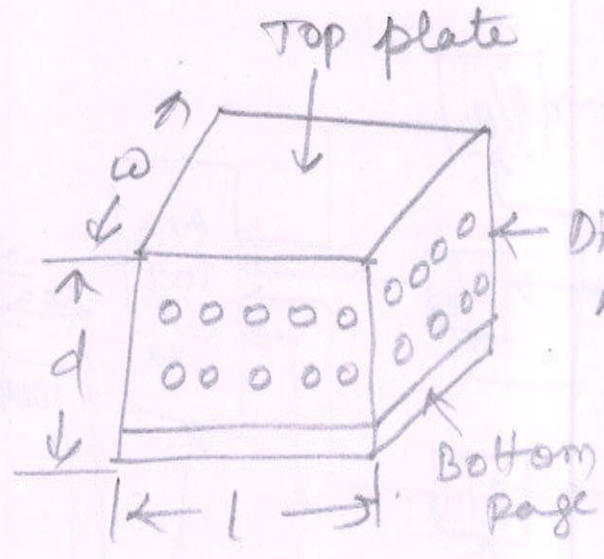


Diagram = 5
Theory = 8

15) b)

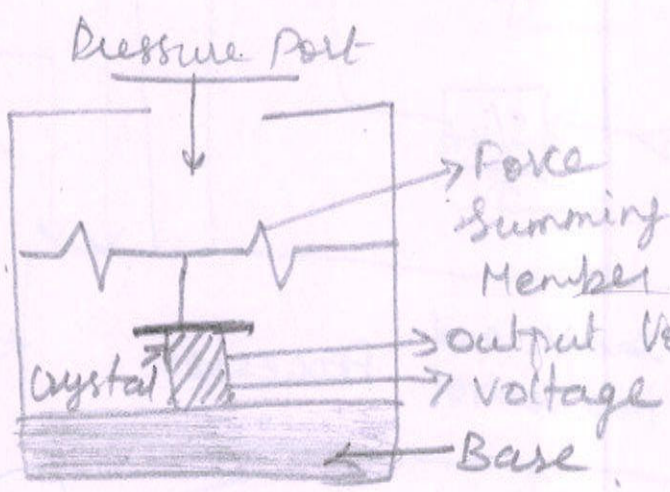


Diagram = 4
Theory = 9

Part - c

Dr. S. THILAGAVATHI M.E., Ph.D.,
PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kaikkurchi - 622 303, Pudukkottai Dt.

16) a)

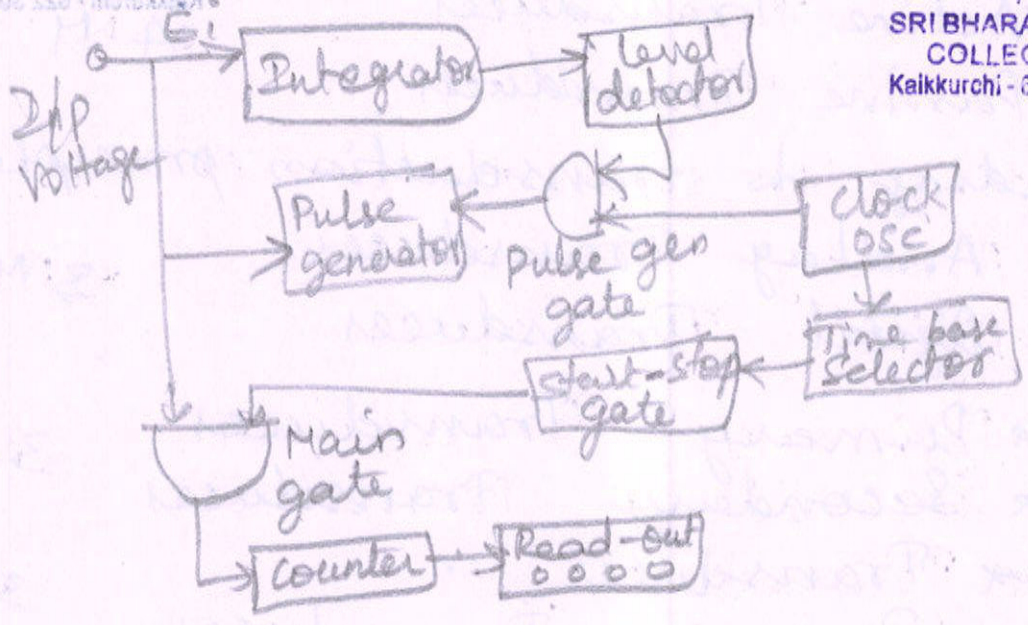


Diagram = 4
Theory = 11

16) b)

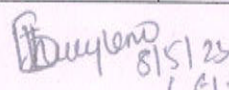
- (i) Flash ADC (5M)
 - (ii) Successive Approximation ADC (5M)
 - (iii) Dual slope ADC (5M)
- P. Bavin



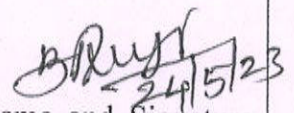
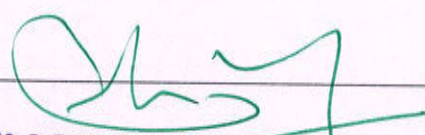
SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN

(Approved by AICTE, New Delhi and affiliated to Anna University, Chennai)
Kaikkurichi, Pudukkottai, Tamil Nadu – 622 303, India

Cycle Test Answer Book

Name	A. Sumithra			Year/ Semester/Section	D/IV
Reg. No	9126105004	Date/Session	8.5.23/AN	Department	EEE
Course code	EE3403	Course Title	Measurements & Instrumentation		
Cycle Test	CT 1	<input type="checkbox"/>	CT 2	<input checked="" type="checkbox"/>	CT 3 <input type="checkbox"/> Model <input type="checkbox"/>
Name and Signature of the Invigilator with date		 8/5/23 (ETHANJA UMA)			

Instruction to the Student: Put tick mark to the question attended in the column against question.									
Part A			Part B / Part C				Total Marks		
Q. No.	✓	Marks	Q. NO.	✓	a	✓		b	
					Marks			Marks	
1	✓	2	11	✓	11			11	
2	✓	2	12				✓ 11	11	
3	✓	2	13	✓	12			12	
4	✓	2	14				✓ 12	12	
5	✓	2	15				✓ 13	13	
6	✓	1	16	✓	14			14	
7	✓	2	Grand Total						73
8	✓	2	92%				P. Bowin (Mrs P. Bowinila) 8/5/23 Name and Signature of the Examiner with date		
9	✓	2							
10	✓	2							
Total		19	Grand Total						

To be filled by the examiner							
Course Outcomes	CO1	CO2	CO3	CO4	CO5	CO6	Total
Marks allotted	—	—	38	13	34	15	100
Marks Obtained	—	—	33	12	33	14	92
IQAC Audit - Remarks							 24/5/23 Name and Signature of the IQAC member
							

Dr. S. THILAGAVATHI M.E., Ph.D.,
PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kaikkurichi - 622 303, Pudukkottai Dt.

MRS. B. Priya



SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN

KAIKKURICHI, PUDUKKOTTAI – 622 303

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

ACADEMIC YEAR 2022 – 2023 (EVEN SEMESTER)

STUDENTS MARK STATEMENT- CO BASED

CYCLE TEST-II

SUBJECT CODE & TITLE: EE3403-MEASUREMENTS & INSTRUMENTATION

YEAR/SEM: II/IV

MONTH & YEAR: May'2023

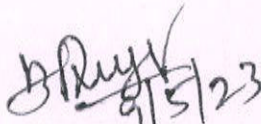
S.NO	REG NO	STUDENT NAME	CO3 (38)	CO4 (13)	CO5 (34)	CO6 (15)	TOTAL (100)
1.	912621105001	GOKULAPRAVEENA .A	24	10	24	11	69
2.	912621105004	SUMITHRA.S	33	12	33	14	92

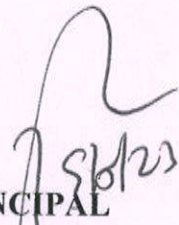
MARKS RANGE:

<20	20-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100
-	-	-	-	-	1	-	-	1

Total No.of Candidates Present	2
Total No.of Candidates Absent	NIL
Total No.of Students Pass	2
Total No. of Students Fail	NIL
Percentage of Pass	100%

P. Bavin
FACULTY INCHARGE


9/5/23
HoD/EEE
HOD EEE
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
KAIKKURICHI,
PUDUKKOTTAI - 622 303.


9/5/23
PRINCIPAL
PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
KAIKKURICHI - 622 303,
PUDUKKOTTAI DISTRICT


Dr. S. THILAGAVATHI M.E., Ph.D.,
PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kaikkurichi - 622 303, Pudukkottai Dt.



SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN
(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai-25)
Kaikkurichi, Pudukkottai, Tamil Nadu – 622 303, India
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

ROOT CAUSE ANALYSIS

Name of the Faculty : Mrs.B.PRIYA

Course Code & Name: EE8018 & Microcontroller
Based Sytsem Design

Degree & Program : B.E & EEE

Semester : VIII

Cycle Test : I/II/III

Exam/Month & Year : March '2023

Target : 100 %

Achieved : 70 %

S.NO	REG NO	NAME OF THE STUDENT	CAUSES FOR FAILURE	CORRECTIVE ACTION TAKEN
1.	912619105003	P. Abitha	Not study well for exam due to Mother's sickness	Advised to study well for next Exam.
2.	912619105005	R. Deepika	Health Issues.	Advised to take care of her health & study well.
3.	912619105301	R. Ragavi	Theory didn't write well	Advised to study & practice theory more.
4.				
5.				
6.				

Signature of the Faculty Member

Signature of the HoD/EEE
HOD EEE

SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
KAIKKURICHI,
PUDUKKOTTAI - 622 303.

Dr. S. THILAGAVATHI M.E., Ph.D.,
PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kaikkurichi - 622 303, Pudukkottai Dt.



2022-2023

SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN
KAIKKURICHI, PUDUKKOTTAI – 622 303.

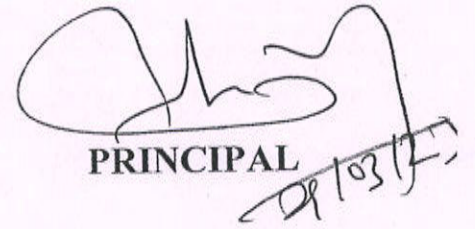
Circular

Date: 29.03.2023

Retest for First cycle test will be conducted from 03.04.2023 to 8.04.2023 for the IV, VI & VIII semester (II, III & IV year) students.

The following instructions are to be followed by the faculty members.

- Total marks for which the question paper to be set will be for 50 marks.
(PART A 5X2=10, PART B 2X13=26 & PART C 1X14=14)
- It is the responsibility of the **question paper** setter to take the Xerox copies of the required number of question papers.
- Concerned Faculty members are requested to conduct the examination as per the schedule and handover the valued answer scripts to the students on or before 10.04.2023.


PRINCIPAL
29/03/23

Cc:

- All HoD'S /CIVIL/CSE/EEE/ECE
- All faculty
- IQAC Co-ordinator
- Exam cell
- Office file


Dr. S. THILAGAVATHI M.E., Ph.D.
PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kaikkurchi - 622 303, Pudukkottai Dt.




**SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN
KAIKKURICHI, PUDUKKOTTAI – 622 303.**

Circular

Date: 29.03.2023

Retest for First cycle test will be conducted on 03.04.2023 & 04.04.2023 for the VIII semester (IV Year) B.E students for 50 marks as per the time table given below. Students are directed to prepare well and score good marks.

Date	4.00 pm -5.30 pm
03-04-2023	CE8021-Structural Dynamics and Earthquake Engineering (CIVIL) CS8080-Information retrieval Techniques (CSE) EE8018-Microcontroller Based System Design (EEE) EC8094- Satellite Communication (ECE)
04-04-2023	GE8076-Profession Ethics in Engineering (CIVIL/CSE/EEE/ECE)


PRINCIPAL
29/03/23

Cc:

- All IV year B.E Classes
- All faculty
- IQAC Co-ordinator
- Exam cell
- Notice Board
- Office file


Dr. S. THILAGAVATHI M.E., Ph.D.,
PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kalkkurchi - 622 303, Pudukkottai Dt.

Register Number:

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN

(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai)

Kaikkurichi, Pudukkottai, Tamil Nadu – 622 303, India

CYCLE TEST - I RETEST			Date/Session	3.4.2023	Marks	50
Course code	EE8018	Course Title	MICROCONTROLLER BASED SYSTEM DESIGN			
Regulation	2017	Duration	90 minutes	Academic Year	2022-23	
Year	IV	Semester	VIII	Department	EEE	

COURSE OUTCOMES

C410.1	Explain about understand and apply computing platform and software for engineering problems.
C410.2	Comprehend the concepts of Architecture of PIC microcontroller.
C410.3	Discuss on basics concept of Interrupts and timers.
C410.4	Describe about the importance of Peripheral devices for data communication.
C410.5	Demonstrate about the basics of sensor interfacing.
C410.6	Illustrate the Architecture of ARM processors.

Q.No.	Question	CO	BTS
PART A			
(Answer all the Questions 10 x 2 = 20 Marks)			
1	Difference between 8051 and PIC.	C410.1	K3
2	What are the benefits of having RISC architecture?	C410.1	K1
3	What do you mean by Brown out Reset?	C410.2	K1
4	Define Subroutine.	C410.2	K2
5	What is the necessity of prescalar in the timer operation?	C410.3	K1
PART B			
(Answer all the Questions 2 x 13 = 26 Marks)			
06a	Draw and explain about the architecture of PIC microcontroller.	C410.2	K2
OR			
06b	Explain the addressing modes of PIC microcontroller.	C410.2	K2
07a	Explain the interrupt structure of PIC microcontroller with neat diagram.	C410.3	K2
OR			
07b	In detail give an account on Timer programming, RAM/ROM allocation in PC.	C410.3	K2
PART C			
(Answer all the Questions 1 x 14 = 14 Marks)			
08	Explain the modes of Timer 1 of PIC16C6x microcontroller with block diagram. Also explain the function of associated registers.	C410.3	K2

Course Faculty
 Mrs. B. PRIYA
 (Name / Sign / Date)

Dr. S. THILAGAVATHI M.E., Ph.D.,
 PRINCIPAL
 SRI BHARATHI ENGINEERING
 COLLEGE FOR WOMEN
 Kaikkurichi - 622 303, Pudukkottai Dt.

HoD
 Mrs. B. PRIYA
 (Name / Sign / Date)
 HOD EEE
 SRI BHARATHI ENGINEERING
 COLLEGE FOR WOMEN
 KAIKKURICHI,
 PUDUKKOTTAI - 622 303.



SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN

(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai-25)

KAIKURICHI, PUDUKKOTTAI -622 303

ACADEMIC YEAR 2022-2023 - EVEN SEMESTER

ATTENDANCE SHEET FOR RETEST

RETEST FOR CYCLE TEST-I

PROGRAM : B.E / EEE
YEAR/SEM : IV/VIII
SUBJECT CODE & TITLE : EE8018 & MICROCONTROLLER BASED SYSTEM DESIGN
DATE : 3.4.2023

SI.NO	REG.NO	NAME	SIGNATURE
1	912619105003	ABITHA P	P. Abitha.
2	912619105005	DEEPIKA R	D. Deepi
3	912619105301	RAGAVI R	R. Ragavi.

Signature of the Faculty Member

HoD/EEE
HOD EEE

SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
KAIKKURICHI,
PUDUKKOTTAI - 622 303.


Dr. S. THILAGAVATHI M.E., Ph.D.,
PRINCIPAL

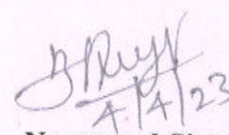
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kalkurichi - 622 303, Pudukkottai Dt.

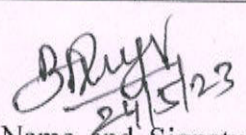

SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN

(Approved by AICTE, New Delhi and affiliated to Anna University, Chennai)
Kaikkurichi, Pudukkottai, Tamil Nadu – 622 303, India

Cycle Test (Retest) Answer Book

Name	R. Ragavi			Year/ Semester/Section	ID/VII
Reg. No	91261910530	Date/Session	3.4.23	Department	EEE
Course code	EE8018	Course Title	Microcontroller Based system design		
Cycle Test (Retest)	CT 1	<input checked="" type="checkbox"/>	CT 2	<input type="checkbox"/>	CT 3 <input type="checkbox"/> Model <input type="checkbox"/>
Name and Signature of the Invigilator with date		 3/4/23 (Mrs. B. Priya)			

Instruction to the Student: Put tick mark to the question attended in the column against question.								
Part A			Part B / Part C				Total Marks	
Q. No.	✓	Marks	Q. NO.	✓	a	✓		b
					Marks			Marks
1	✓	1	11	✓	08		08	
2	✓	1	12	✓	08		08	
3	✓	1	13	✓	05		05	
4	✓	1	14					
5	✓	1	15					
6		/	16					
7			Grand Total				21	
8			$\frac{26}{50}$ 52%				 4/4/23 (Mrs. B. Priya)	
9								
10								
Total		05	Grand Total				Name and Signature of the Examiner with date	

To be filled by the examiner							
Course Outcomes	CO1	CO2	CO3	CO4	CO5	CO6	Total
Marks allotted	04	30	42				76
Marks Obtained	02	10	14				26
IQAC Audit - Remarks							 24/5/23 Name and Signature of the IQAC member
							

Dr. S. THILAGAVATHI M.E., Ph.D.,
PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kaikkurichi - 622 303, Pudukkottai Dt.

(Mrs. B. Priya)



SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN

KAIKKURICHI, PUDUKKOTTAI – 622 303

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

ACADEMIC YEAR 2022 – 2023 (EVEN SEMESTER)

STUDENTS MARK STATEMENT- CO BASED

CYCLE TEST-I (RETEST)

SUBJECT CODE & TITLE: EE8018-MICROCONTROLLER BASED SYSTEM DESIGN

YEAR/SEM: IV/VIII

MONTH & YEAR: April'2023

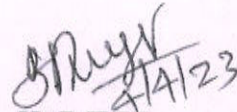
S.NO	REG NO	STUDENT NAME	CO1 (04)	CO2 (30)	CO3 (42)	TOTAL (50)	TOTAL (100)
1	912619105003	ABITHA P	02	12	11	25	50
2	912619105005	DEEPIKA R	00	10	15	25	50
3	912619105301	RAGAVLR	02	10	14	26	52

MARKS RANGE:

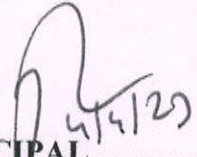
<20	20-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100
-	-	-	2	1	-	-	-	-

Total No.of Candidates Present	03
Total No.of Candidates Absent	NIL
Total No.of Students Pass	03
Total No. of Students Fail	NIL
Percentage of Pass	100%


FACULTY INCHARGE


**HoD/EEE
HOD EEE**

**SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN
KAIKKURICHI,
PUDUKKOTTAI - 622 303.**


PRINCIPAL

**SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN
KAIKKURICHI - 622 303.
PUDUKKOTTAI DISTRICT**


**Dr. S. THILAGAVATHI M.E., Ph.D.,
PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kaikkurichi - 622 303, Pudukkottai Dt.**



SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN

(Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai-25)

Kaikkurichi, Pudukkottai, Tamil Nadu – 622 303, India

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

ACADEMIC YEAR 2022 – 2023 (EVEN SEMESTER)

FINAL INTERNAL STUDENTS MARK STATEMENT(Out of 20)

SUBJECT CODE & TITLE: EE3403 & MEASUREMENTS AND INSTRUMENTATION

YEAR/SEM: II/IV

S.NO	REG NO	STUDENT NAME	TOTAL (20)
1.	912621105001	GOKULAPRAVEENA.S	15
2.	912621105004	SUMITHRA.S	17

P. Boina

FACULTY INCHARGE

Arjun

HOD/EEE
HOD EEE

SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
KAIKKURICHI,

PUDUKKOTTAI - 622 303.

[Signature]

PRINCIPAL

PRINCIPAL

SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN

KAIKKURICHI - 622 303.

PUDUKKOTTAI DISTRICT

[Signature]

Dr. S. THILAGAVATHI M.E., Ph.D.,

PRINCIPAL

SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN

Kaikkurichi - 622 303, Pudukkottai Dt.



SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN

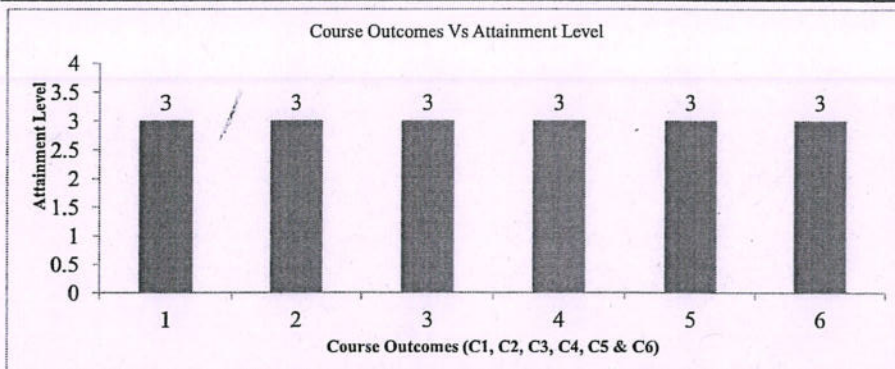
(Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai)

Department of Electrical and Electronics Engineering

Internal Assessment - Attainment of Course Outcomes (Through Direct Assessment)

ACADEMIC YEAR - 2022 - 2023																		BATCH						2021 - 2025														
COURSE CODE/TITLE		EE3403/MEASUREMENTS AND INSTRUMENTATION																COURSE OUTCOME						1	2	3	4	5	6									
YEAR/SEM		II/IV																TARGET(%)						65	65	65	65	65	65									
COURSE COORDINATOR		Mrs.P. BOWNILA																TOTAL STRENGTH						2														
ATTAINMENT LEVEL		Level		Range																																		
		1		UP TO 60% of the students scored more than target																																		
		2		61 - 79% of the students scored more than target																																		
		3		80% & ABOVE of the students scored more than target																																		
S.NO	REG NO	NAME OF THE STUDENT	IAT 1 - MARKS ALLOTTED						IAT 2 - MARKS ALLOTTED						IAT 3 - MARKS ALLOTTED						Assignment / Mini Project / Tutorial / Seminar						TOTAL COURSE OUTCOME											
			C1	C2	C3	C4	C5	C6	C1	C2	C3	C4	C5	C6	C1	C2	C3	C4	C5	C6	C1	C2	C3	C4	C5	C6	C1	C2	C3	C4	C5	C6						
			40	30	30										40	30	30										10	10			10	10	40	40	40	40	40	40
1	912621105001	GOKULAPRAVEENA A	30	22	22										28	21	21										7	8			8	8	30	29	30	28	29	29
2	912621105004	SUMITHRA S	31	23	23										37	28	28										8	8			9	8	31	31	31	37	37	36

CO's Target Value	26.0	26.0	26.0	26.0	26.0	26.0
No. of Students scored above CO's Target Value	2	2	2	2	2	2
Percentage of Students scored above Target	100.0	100.0	100.0	100.0	100.0	100.0
CO Attainment	3	3	3	3	3	3
CO attainment Values to plot the Graph	3	3	3	3	3	3



P. Bown
Faculty Incharge

[Signature]
Dr. S. THILAGAVATHI M.E., Ph.D.,
PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kaikkurchi - 622 303, Pudukkottai Dt.

[Signature]
HOD/EEE
HOD EEE
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
KAIKKURICHI,
PUDUKKOTTAI - 622 303.



SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN
(Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai)

DEPARTMENT OF EEE

COURSE OUTCOME ATTAINMENT - UNIVERSITY EXAMINATION

ACADEMIC YEAR : 2022 - 2023 (EVEN SEM)

YEAR/SEM : II/IV

Batch: 2021-2025

SUBJECT : EE3403 - MEASUREMENTS AND INSTRUMENTATION

CO Attainment Level: 1 - (UPTO 60%) 2- (61%-79%) 3-(80% and Above)

TOTAL STRENGTH : 2

S.NO	Register No	NAME	Univ. Grade
1	912621105001	GOKULAPRAVEENA A	B
2	912621105004	SUMITHRA S	B+

No. of O Grade	0	0
No. of A+ Grade	0	0
No. of A Grade	0	0
No. of B+ Grade	1	1
No. of B Grade	1	1
No. of U Grade	0	0
No. of UA Grade	0	0
Target for course outcome Attainment	60	2
No of students above the target	2	
CO-Attainment University (%)	100.00	

P. Devi
Faculty Incharge

[Signature]
HOD/EEE

HOD EEE
BHARATHI ENGINEERING
COLLEGE FOR WOMEN
KANKURICHI,
PUDUKKOTTAI - 622 303.

[Signature]
Dr. S. THILAGAVATHI M.E., Ph.D.,
PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kankkurchi - 622 303, Pudukkottai Dt.

Overall Attainment Sheet – COs - POs & PSOs attainment calculation

CO	CO-Attainment Internal (CO-INT) (Avg. Attainment of All section) (%)	CO-Attainment University (CO-UNI) (Avg. Attainment of All section) (%)	Direct CO Attainment (0.20xCO-INT + 0.80xCO-UNI) (%)	CO Attainment Level
C214.1	100.0	100.00	100.0	3
C214.2	100.0	100.00	100.0	3
C214.3	100.0	100.00	100.0	3
C214.4	100.0	100.00	100.0	3
C214.5	100.0	100.00	100.0	3
C214.6	100.0	100.00	100.0	3

Expected CO-PO Level

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C214.1	3	3	2	2	-	2	-	2	-	2	-	2	3	1	1
C214.2	3	3	2	2	-	-	-	-	-	2	-	2	3	1	1
C214.3	3	3	2	2	-	2	-	-	-	2	-	2	3	1	1
C214.4	3	3	2	2	-	-	-	2	-	2	-	-	3	1	1
C214.5	3	3	2	2	-	-	-	-	-	2	-	-	3	1	1
C214.6	3	3	2	2	-	-	-	-	-	2	-	-	3	1	1
C214	3	3	2	2	-	2	-	2	-	2	-	2	3	1	1

PO Attainment Level

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C214.1	3	3	2	2	-	2	-	2	-	2	-	2	3	1	1
C214.2	3	3	2	2	-	-	-	-	-	2	-	2	3	1	1
C214.3	3	3	2	2	-	2	-	-	-	2	-	2	3	1	1
C214.4	3	3	2	2	-	-	-	2	-	2	-	-	3	1	1
C214.5	3	3	2	2	-	-	-	-	-	2	-	-	3	1	1
C214.6	3	3	2	2	-	-	-	-	-	2	-	-	3	1	1
C214	3	3	2	2	-	2	-	2	-	2	-	2	3	1	1

Attainment of POs and PSOs:

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C214	3	3	2	2	-	2	-	2	-	2	-	2	3	1	1
Attainment	3	3	2	2	-	2	-	2	-	2	-	2	3	1	1

Comments by Program Coordinator	1. 2.
Remarks by HoD	

P. Bouri
Name and Signature
of the Faculty Member

(Mrs. P. BOURNILA)

[Signature]
Dr. S. THILAGAVATHI M.E., Ph.D.
PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kaikkurchi - 622 303, Pudukkottai Dt.

[Signature]
HoD/EEE
HOD EEE
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
KAIKKURCHI,
PUDUKKOTTAI - 622 303.