Sri Indu Institute of Engineering and Technology (Autonomous)
(Formerly RVR Institute of Engineering & Technology)
An Autonomous Institution Under UGC
NAAC Accredited. Recognized Under 2(f) of UGC Act 1956
ESTD : 2007
EAMCET CODE: INDI
Approved by AICTE, New Delhi, & Affiliated to JNTUH, Hyderabad.
JNTUH CODE: X3

COURSE FILE

ON

ENGINEERING CHEMISTRY LAB

Course Code – CH106BS

I B. Tech Semester-I
A.Y. 2022-2023

Prepared by
O.SUBHASHINI
Asst. Professor

Head of the Department
Department of H&S
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.

Name of the Physical laboratory:	ENGINEERING CHEMISTRY LAB
Course code	CH106BS
Room No	B-104&D-103
Name of the lab incharge	K.MOUNIKA
Name of the faculty incharge	O.SUBHASHINI

Index of Lab File

INSTITUTE VISION & 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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Khalsa Ibrahimpatnam, Sheriguda (V), Ibrahimpatnam (M), Ranga Reddy Dist., Telangana – 501 510
Website: https://siiet.ac.in/

PROGRAMME OUTCOMES

PO1: Engineering Knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2: Problem Analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3: 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.

PO4: 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.

PO5: 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.

PO6: The Engineer & 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.

PO7: Environment & Sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9: Individual & Team Work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10: 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.

PO11: Project Management & 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.

PO12: 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.

Head of the Department
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SRI INDU INSTITUTE OF ENGG & TECH
Sheriguda(V) Ibrahimpatnam (M) R.R. Dist-501 510

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

B.Tech. in COMPUTER SCIENCE AND ENGINEERING

COURSE STRUCTURE

I YEAR SYLLABUS (BR22 Regulations)

Applicable from Academic Year: 2022-23 Batch

I Year I Semester

S. No.	Course Code	Course Title	L	T	P	Credits
1.	MA101BS	Matrices and Calculus	3	1	0	4
2.	CH103BS	Engineering Chemistry	3	1	0	4
3.	CS103ES	Programming for Problem Solving	3	0	0	3
4.	EE101ES	Basic Electrical Engineering	2	0	0	2
5.	ME101ES	Computer Aided Engineering Graphics	1	0	4	3
6.	CS106ES	Elements of Computer Science & Engineering	0	0	2	1
7.	CH106BS	Engineering Chemistry Laboratory	0	0	2	1
8.	CS107ES	Programming for Problem Solving Laboratory	0	0	2	1
9.	EE102ES	Basic Electrical Engineering Laboratory	0	0	2	1
		Induction Program				
		Total	**12**	**2**	**12**	**20**

I Year II Semester

S. No.	Course Code	Course	L	T	P	Credits
1.	MA201BS	Ordinary Differential Equations and Vector Calculus	3	1	0	4
2.	AP202BS	Applied Physics	3	1	0	4
3.	ME202ES	Engineering Workshop	0	1	3	2.5
4.	EN204HS	English for Skill Enhancement	2	0	0	2
5.	EC201ES	Electronic Devices and Circuits	2	0	0	2
6.	AP205BS	Applied Physics Laboratory	0	0	3	1.5
7.	CS201ES	Python Programming Laboratory	0	1	2	2
8.	EN207HS	English Language and Communication Skills Laboratory	0	0	2	1
9.	CS203ES	IT Workshop	0	0	2	1
10.	*MC201ES	Environmental Science	3	0	0	0
		Total	**13**	**4**	**12**	**20**

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ENGINEERING CHEMISTRY LABORATORY
(Course Code: CH106BS)

B.Tech. I Year I Sem.

L	T	P	C
0	0	2	1

Prerequisites: Engineering Chemistry

Course Objectives: The course consists of experiments related to the principles of chemistry requiredfor engineering student. The student will learn:

- Estimation of hardness of water to check its suitability for drinking purpose.
- Students are able to perform estimations of acids and bases using conductometry,potentiometry and pH metry methods.
- Students will learn to prepare polymers such as Bakelite and nylon-6 in the laboratory.
- Students will learn skills related to the lubricant properties such as saponification value, surfacetension and viscosity of oils.

Course Outcomes: The experiments will make the student gain skills on:

- Determination of parameters like hardness of water and rate of corrosion of mild steel in variousconditions.
- Able to perform methods such as conductometry, potentiometry and pH metry in order to findout the concentrations or equivalence points of acids and bases.
- Students are able to prepare polymers like bakelite and nylon-6.
- Estimations saponification value, surface tension and viscosity of lubricant oils.

List of Experiments:

I. **Volumetric Analysis:** Estimation of Hardness of water by EDTA Complexometry method.

II. **Conductometry:** Estimation of the concentration of an acid by Conductometry.

III. **Potentiometry:** Estimation of the amount of Fe^{+2} by Potentiomentry.

IV. **pH Metry:** Determination of an acid concentration using pH meter.

V. **Preparations:**

1. Preparation of Bakelite.
2. Preparation Nylon – 6.

VI. **Lubricants:**

1. Estimation of acid value of given lubricant oil.
2. Estimation of Viscosity of lubricant oil using Ostwald's Viscometer.

VII. **Corrosion:** Determination of rate of corrosion of mild steel in the presence and absence of inhibitor.

VIII. Virtual lab experiments

1. Construction of Fuel cell and its working.
2. Smart materials for Biomedical applications
3. Batteries for electrical vehicles.
4. Functioning of solar cell and its applications.

REFERENCE BOOKS:

1. Lab manual for Engineering chemistry by B. Ramadevi and P. Aparna, S Chand Publications,New Delhi (2022)
2. Vogel's text book of practical organic chemistry 5th edition
3. Inorganic Quantitative analysis by A.I. Vogel, ELBS Publications.

College Practical Chemistry by V.K. Ahluwalia, Narosa Publications Ltd. New De

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COURSE OUTCOMES

Course Name: Engineering Chemistry Lab (C117)

At the End of the course, student will be able to

C117.1 Determination of parameters like hardness of water by the complexometric titrations (Understanding L2)

C117.2 Students can able to perform the methods such as conductometry, pH metry to find out concentration of unknown solutions. (Applying L3)

C117.3 Students can determine the Potentiometry in order to find out the concentrations of acids and bases. (Applying L3)

C117.4 Students are able to synthesise Polymers-Bakelite & Nylon-6. (Applying L3)

C117.5 Students can estimate the saponification value and viscosity of the lubricants. (Analyzing L4)

C117.6 They can able to demonstrate the rate of corrosion of mild steel in various conditions (Understanding L2)

COs and POs & PSOs Mapping

High -3 Medium -2 Low-1

Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2
C117.1	2	2	-	-	-	-	1	-	-	-	-	-	-	-
C117.2	2	2	-	-	1	-		-	-	-	-	-	-	-
C117.3	2	1	-	1	1	-	1	-	-	-	-	-	-	-
C117.4	2	-	2	-	-	1		-	-	-	-	-	-	-
C117.5	2	1	-	-	-		1	-	-	-	-	-	-	-
C117.6	2	1	-	1	-	1	1	-	-	-	-	-	-	-
AVE	2.00	1.4	2.00	1.0	1.0	1.0	1.0	-	-	-	-	-	-	-

MAPPING OF EXPERIMENT OUTCOMES WITH CO/PO'S/PSO

EXPERIMENT OBJECTIVES	EXPERIMENT OUTCOMES	CO	PO'S
1.To estimate the total hardness of water by EDTA method.	The students will be able to analyze the nature of salts causing hardness and to solve the engineering problems arising during steam production in boilers.	C117.1	PO1, PO2 ,PO7
2.To determine the strength of the strong acid by titration with strong base conductometrically.	The student shall be able to analyze the variation of conductance values of given acid with addition of strong base using conductivity meter.	C117.2	PO1, PO2 PO5
3.To estimate the Fe^{+2} by potentiometry using $KMnO_4$.	The student shall be able to Analyze the variation of EMF values of given acid with addition of $KMnO_4$ using potentiometer.	C117.3	PO1, PO2, PO4, PO5, PO7
4.To estimate the amount of HCl present in the given volume of test solution by P^H metry.	The student shall be able to find out the concentrations of acids and bases.	C117.2	PO1, PO2 PO5
5.To prepare Bakelite polymer using Phenol and Formaldehyde.	The student shall be able to prepare the polymer of Bakelite	C117.4	PO1, PO3 PO6
6.To prepare Nylon-6,6 polymer using adipoyl chloride and hexamethylenediammine.	The student shall be able to prepare the polymer of Nylon-6,6.	C117.4	PO1, PO3 PO6
7.To determine the acid value of Coconut oil.	The student shall be able to identity and calculate the acid values of coconut oil.	C117.5	PO1, PO2 PO7

8. To determine the viscosity of the given coconut oil and ethanol.	The students shall be able to Determine and calculate the Viscosity coefficient values of coconut oil and ethanol.	C117.5	PO1, PO2 PO7
9.To determine the rate of corrosion of mild steel in acidic medium in the absence and presence of an inhibitor and calculate the efficiency of the Inhibitor.	The student can able to understand the efficiency and function of inhibitor in the Process of corrosion.	C117.6	PO1, PO2 PO4, PO6 PO7
ADDITIONAL EXPERIMENTS			
10.To determine the strength of the weak acid by titration with strong base conductometrically.	The student shall be able to analyze the variation of conductance values of given weak acid with addition of strong base using conductivity meter.	C117.2	PO1, PO2 PO5
11.To determine the surface tension of a given liquid at room temperature using stalagmometer by drop number method.	The student shall be able to determine and calculate the surface tension values of reference liquid and given liquid	C117.5	PO1, PO2 PO7

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Class: CSE-A **Semester: I** **W.E.F-14-11-2022** **LH:-D-107**

	I 9:40-10:30	II 10:30 - 11:20	III 11:20-12:10	12:10-12.45	IV 12.45-1.35	V 1.35-2.25	VI 2.25-3.15	VII 3.15-4.00
MON	PPS LAB			LUNCH	BEE	EC	PPS	PPS(T)/EC(T)
TUE	BEE	PPS	M&C			BEE/EC LAB		M&C(T)/BEE(T)
WED	EG PRACTICE				BEE	M&C	ECSE	LIB
THU	PPS	EC	BEE		PPS	M&C	BEE	EC(T)/PPS(T)
FRI	ECSE	EC	M&C		EG PRACTICE			BEE(T)/M&C(T)
SAT		BEE/EC LAB			PPS	EC	M&C	EG(T)

Course Code	Course Name	Name of the Faculty	Course Code	Course Name	Name of the Faculty
MA101BS	Matrices and Calculus	B.RAMADEVI	ME101ES	Computer Aided Engineering Graphics	M.YADAGIRI
CH103BS	Engineering Chemistry	Dr.D.PREMALATHA	CH106BS	Engineering Chemistry Lab	O.SUBHASHINI/ Dr.D.PREMALATHA
CS103ES	Programming for Problem Solving	D.SWAPNA	CS107ES	Programming for Problem Solving Lab	D.SWAPNA/B.RAJASHWARI
EE101ES	Basic Electrical Engineering	K.RAJASHEKAR	EE102ES	Basic Electrical Engineering Lab	K.RAJASHEKAR/ MP.REENA
CS106ES	Elements of Computer Science & Engineering	J.PUJITHA			

Class In-Charge

Ch. Savitha
Time Table Coordinator

Head of The Department

Sri Indu Institute of Engineering & Technology SHERIGUDA 501 510

Dr. R. YADAGIRI RAO
M.Sc.,B.Ed.,M.Tech(CSE).,Ph.D
Head of the Department
Department of H&S
SRI INDU INSTITUTE OF ENGG & TE
Sheriguda(V), Ibrahimpatnam (M), R.R. Dist.

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X3

BR22

Lab External Question paper

Year & Semester: I-I Branch: CSE

Subject Name: Engineering Chemistry Lab Faculty Name: O.SUBHASHINI

EXTERNAL EXAM QUESTION PAPER

1.Estimate the total hardness of water by complexometric method using EDTA.

2.Estimate of an HCl by conductometric titration.

3.Estimate of $Fe^{+2}$by potentiometry using by $KMNO_4$.

4.Determine the acid concentration by using P^H meter.

5.Estimate of an acetic acid by conductometric titration.

6. Determine the viscosity of a given liquid by using Ostwald's viscometer.

7.Write about preparation of Bakelite.

8.Write about preparation of nylon -6,6.

9.Determine the acid value of coconut oil.

10.Determine the surface tension of given liquid by using stalagmometer.

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EC Lab External Time Table
Examination Branch

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

DATE	Day	Branch	Session	HT.No	Total No of Students
11-3-2023	SATURDAY	CSE-A	FN	**22X31A0501 TO 22X31A0565**	65
11-3-2023	SATURDAY	CSE-B	AN	**22X31A0566 TO 22X31A05D0**	65
13-3-2023	MONDAY	CSE-C	FN	**22X31A05D1 TO 22X31A05J1**	61
13-3-2023	MONDAY	CYBER SECURITY	AN	**22X31A6201 TO 22X31A6262**	62
14-3-2023	TUESDAY	DS	FN	**22X31A6701 TO 22X31A6764**	64

FN: 9:40am to 12:25pm
AN: 1:00pm to 4:00pm

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Department of H&S
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EC Lab External Time Table with examiners SEM-I

DATE	Day	Branch	Session	HT.No	Total No of Students	Internal Examiner	External Examiner
11-3-2023	SATURDAY	CSE-A	FN	**22X31A0501 TO 22X31A0565**	65	O.SUBHASHINI	A. Koteswarao (Asst.Prof) TKRCET 8179731744
11-3-2023	SATURDAY	CSE-B	AN	**22X31A0566 TO 22X31A05D0**	65	V.MOUNIKA	A.Koteswarao (Asst.Prof) TKRCET 8179731744
13-3-2023	MONDAY	CSE-C	FN	**22X31A05D1 TO 22X31A05J1**	61	K.MOUNIKA	S. Anusha (Asst.Prof) TKRCET 9908590046
13-3-2023	MONDAY	CYBER SECURITY	AN	**22X31A6201 TO 22X31A6262**	62	K.MOUNIKA	S. Anusha (Asst.Prof) TKRCET 9908590046
14-3-2023	TUESDAY	DS	FN	**22X31A6701 TO 22X31A6764**	64	O.SUBHASHINI	U.Anand (Asst.Prof) TKRCET 9848376155

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

FN: 9:40am to 12:25pm
AN: 1:00pm to 4:00pm

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LAB OCCUPANCY CHART

ENGINEERING CHEMISTRY LAB

Class: I B.Tech **Semister-1** **W.E.F-14-11-2022** **LH:B-104**

	I 9:40-10:30	II 10:30 -11:20	III 11:20-12:10	12:10-12.45	IV 12.45-1.35	V 1.35-2.25	VI 2.25-3.15	VII 3.15-4.00
MON	MAINTAINANCE			LUNCH	I BTECH I SEM DATA SCIENCE			
TUE	I BTECH I SEM CSE-B				I BTECH I SEM CSE-A			
WED	I BTECH I SEM CSE-C				I BTECH I SEM CYBER SECURITY			
THU	MAINTAINANCE							
FRI								
SAT								

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LAB OCCUPANCY CHART

ENGINEERING CHEMISTRY LAB

Class: I B.Tech **Semister-1** **W.E.F-14-11-2022** **LH: D-103**

	I 9:40-10:30	II 10:30 -11:20	III 11:20-12:10	12:10-12.45	IV 12.45-1.35	V 1.35-2.25	VI 2.25-3.15	VII 3.15-4.00
MON	MAINTAINANCE			**LUNCH**				
TUE								
WED								
THU	I BTECH I SEM CSE-B				I BTECH I SEM DATA SCIENCE			
FRI	I BTECH I SEM CYBER SECURITY				MAINTAINANCE			
SAT	I BTECH I SEM CSE-A				I BTECH I SEM CSE-C			

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ENGINEERING CHEMISTRY LAB

Course: B. Tech. I Year **SUB CODE:CH106BS**

Do's

1.Attend all the practical classes with

a) Observation note book b) Chemistry practical manual c) A neat hand kerchief

2.Follow the instructions of your Lecturer carefully.

3. Read the experiment perfectly before starting.

4. Take the required apparatus and clean them.

5. The observations should be in noted in the note book immediately.

6.Clean the apparatus immediately after the experiment and return to the concerned lab incharge.

7.Do the calculation and get the signature of Lecturer on the observation note book.

8.Always throw the pieces of papers, broken glass pieces etc., in a waste basket only.

9.The observations and calculations should be recorded neatly in the record book and submit the same of the lecturer.

Don'ts

1.Don't handle the apparatus roughly; it leads in damage (or)breakage.

2.Don't perform the experiment with incomplete knowledge, it may lead you in confusion.

3.Don't use excess amount of chemicals (or) reagents.

4.Don't consult your fellow student, if you have doubt in the experiment, consult Lecturer only.

5.Don't throw any solid matter in the sink. Don't waste the chemical or reagent.

6.Don't taste any chemical and inhale poisonous gases.

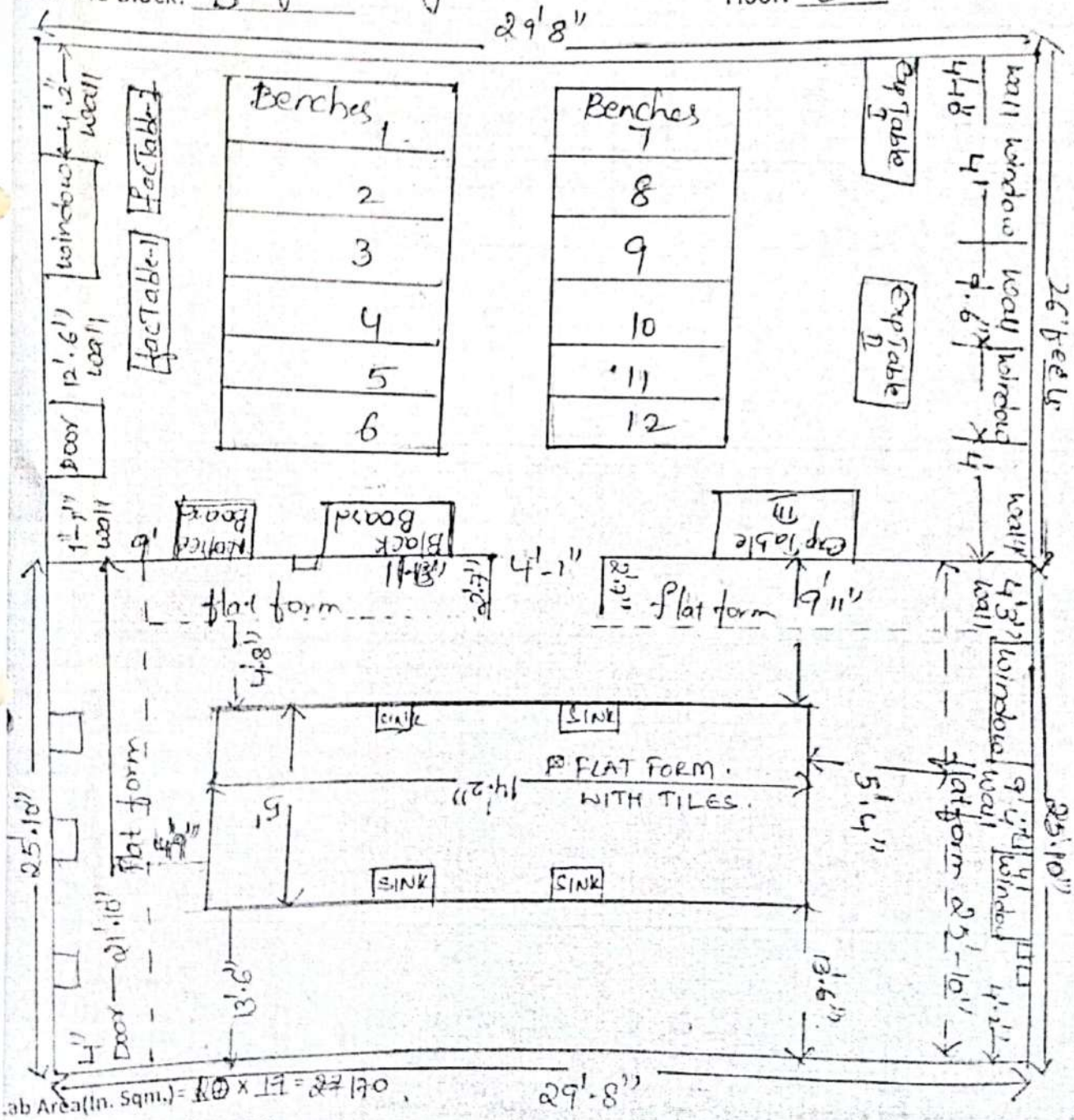
7.Don't waste the water. If it is not required, the tap must be closed.

8.Don't leave the laboratory unless your work bench is clean and all the apparatus is returned to the attender.

SRI INDU INSTITUTE OF ENGINEERING & TECHNOLOGY
Sheriguda (V), Ibrahimpatnam (M), R.R.Dist-501 510
DEPARTMENT OF HUMANITIES AND SCIENCES

PHYSICAL LAB FLOOR PLAN

NAME: Engineering chemistry ROOM NO: B-104
ne of the Block: B Floor: I



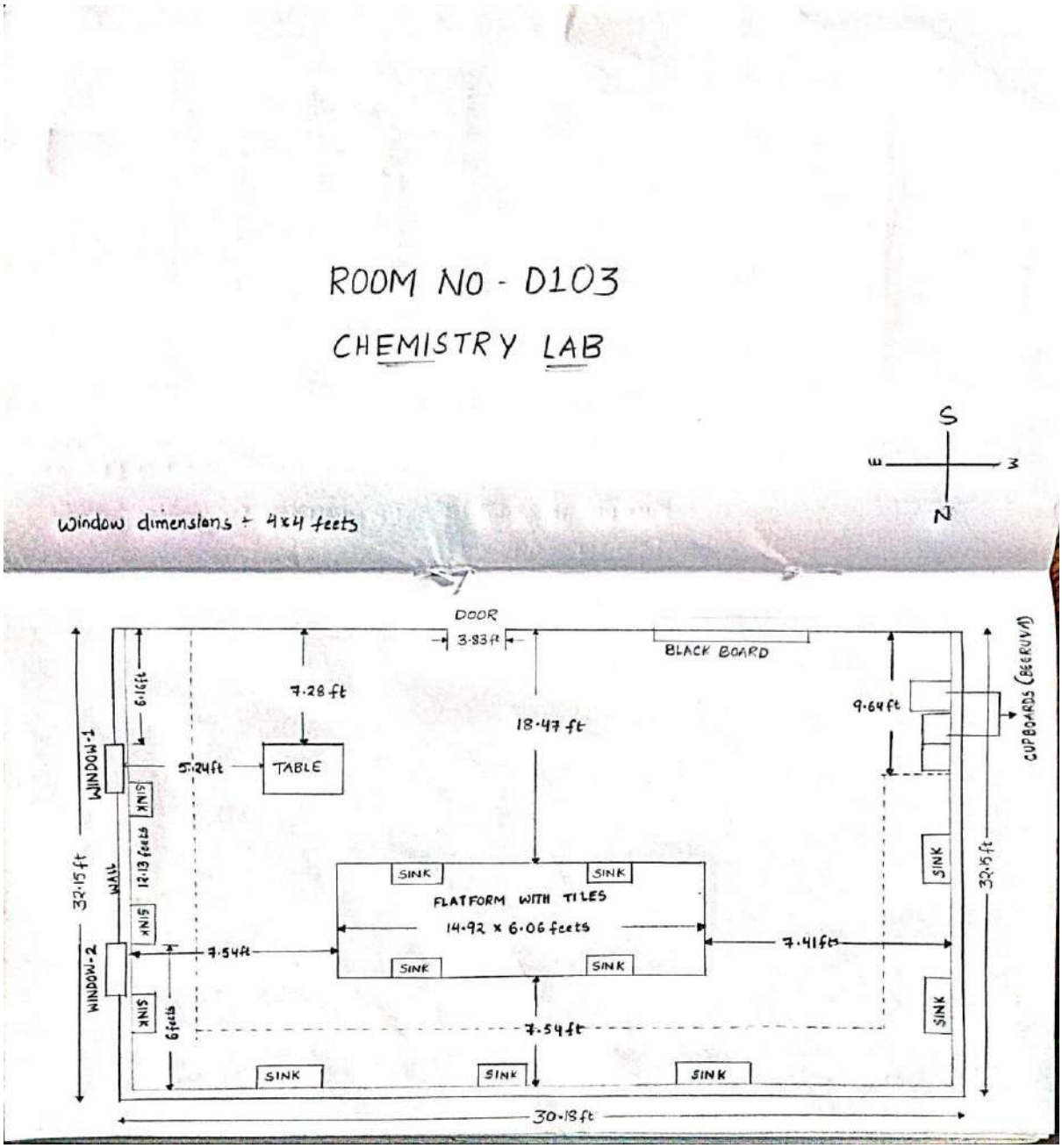
Lab Area(In. Sqm.)= 10 x 14 = 27170.

Lab Area (In. Sft.)= 30 x 52 = 1560

LAB In-charge

Head of the Department

PHYSICAL LAB FLOOR-1 PLAN



Lab area in sq.m=9.198*9.80=90.14
Lab area in sq.ft =30.18*32.15=970.287

LAB in charge

Head of the Department
Department of H&S
SRI INDU INSTITUTE OF ENGG & TECH
Sheriguda(V) Ibrahimpatnam (M) R.R. Dist-501 510

Lab manual link

https://drive.google.com/file/d/1-kd3ieekIp3ipx4CgNmOaQkWM6KYWiTc/view?usp=sharing

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

Department of Humanities and Sciences

Course Outcome Attainment (Internal Examination-1)

Name of the faculty :	O. SUBHASHINI	Academic Year:	2022-23
Branch & Section:	CSE -A	Examination:	INTERNAL -I
Lab Course Name:	ENGINEERING CHEMISTRY	Year/semester	I/I

S.No	HT No.	R+O+A	V+V	E+E+R
Max. Marks ==>		10	10	10
1	22X31A0501	10	6	9
2	22X31A0502	10	9	10
3	22X31A0503	9	5	10
4	22X31A0504	10	7	9
5	22X31A0505	10	8	9
6	22X31A0506	10	9	9
7	22X31A0507	10	8	10
8	22X31A0508	10	9	10
9	22X31A0509	10	7	9
10	22X31A0510	10	7	9
11	22X31A0511	10	7	10
12	22X31A0512	10	7	10
13	22X31A0513	10	6	10
14	22X31A0514	A	A	A
15	22X31A0515	10	7	9
16	22X31A0516	10	8	9
17	22X31A0517	10	8	10
18	22X31A0518	10	9	10
19	22X31A0519	10	7	10
20	22X31A0520	10	6	9
21	22X31A0521	10	7	9
22	22X31A0522	9	6	10
23	22X31A0523	10	6	10
24	22X31A0524	9	5	8
25	22X31A0525	9	5	9
26	22X31A0526	10	5	10
27	22X31A0527	9	5	10
28	22X31A0528	10	6	10
29	22X31A0529	10	9	10
30	22X31A0530	10	8	10
31	22X31A0531	10	9	10
32	22X31A0532	A	A	A
33	22X31A0533	10	5	10
34	22X31A0534	9	5	10
35	22X31A0535	9	5	9
36	22X31A0536	9	5	8
37	22X31A0537	9	6	10
38	22X31A0538	10	5	10
39	22X31A0539	9	5	8
40	22X31A0540	9	5	9
41	22X31A0541	10	5	10
42	22X31A0542	8	7	10
43	22X31A0543	10	5	10
44	22X31A0544	10	5	10
45	22X31A0545	9	5	8
46	22X31A0546	9	5	10
47	22X31A0547	10	5	7
48	22X31A0548	10	7	10
49	22X31A0549	9	5	8
50	22X31A0550	10	7	10
51	22X31A0551	10	7	9
52	22X31A0552	10	9	9
53	22X31A0553	10	9	10
54	22X31A0554	9	5	8
55	22X31A0555	10	5	10
56	22X31A0556	10	5	7
57	22X31A0557	10	8	9
58	22X31A0558	10	5	9
59	22X31A0559	9	5	10
60	22X31A0560	10	6	10
61	22X31A0561	10	6	10
62	22X31A0562	10	7	10
63	22X31A0563	9	7	9
64	22X31A0564	10	8	10
65	22X31A0565	10	7	10

R+O+A : RECORD+OBSERVATION+ATTANDANCE

V+V: VIVA VOICE

E+E+R:EXPERIMENT WRITE UP+EXECUTION+RESULT

Target set by the faculty / HoD	6.00	6.00	6.00
Number of students performed above the target	63	39	63
Number of students attempted	65	65	65
Percentage of students scored more than target	97%	60%	97%

CO Mapping with Exam Questions:

CO - 1	Y	Y	Y
CO - 2	Y	Y	Y
CO - 3	Y	Y	Y
CO - 4			
CO - 5			
CO - 6			

CO Attainment based on Exam Questions:

CO - 1	97%	97%	97%
CO - 2	97%	97%	97%
CO - 3	97%	97%	97%
CO - 4			
CO - 5			
CO - 6			

CO	Intrnal practical	E+E+R	OveralI	Level
CO-1	97%	97%	97%	3
CO-2	97%	97%	97%	3
CO-3	97%	97%	97%	3
CO-4				
CO-5				
CO-6				

Attainment (Internal 1 Examination) = **3**

Attainment Level	
1	40%
2	50%
3	60%

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

Department of Humanities and Sciences

Course Outcome Attainment (Internal Examination-2)

Name of the faculty :	O. SUBHASHINI	Academic Year:	2022-23
Branch & Section:	CSE -A	Examination:	INTERNAL -I II
Lab Course Name:	ENGINEERING CHEMISTRY	Year/semester	I/I

S.No	HT No.	R+O+A	V+V	E+E+R	ppt
Max. Marks ==>		10	10	10	10
1	22X31A0501	10	8	10	10
2	22X31A0502	10	10	10	10
3	22X31A0503	10	9	10	10
4	22X31A0504	10	10	10	10
5	22X31A0505	10	10	10	10
6	22X31A0506	10	9	10	10
7	22X31A0507	10	9	10	10
8	22X31A0508	10	7	10	10
9	22X31A0509	10	8	10	10
10	22X31A0510	10	9	10	10
11	22X31A0511	10	8	10	10
12	22X31A0512	10	8	10	10
13	22X31A0513	10	8	10	10
14	22X31A0514	A	A	A	A
15	22X31A0515	10	8	10	10
16	22X31A0516	10	10	10	10
17	22X31A0517	10	9	10	10
18	22X31A0518	10	9	10	10
19	22X31A0519	10	8	10	10
20	22X31A0520	10	7	10	10
21	22X31A0521	10	10	10	10
22	22X31A0522	A	A	A	10
23	22X31A0523	10	10	10	10
24	22X31A0524	10	8	10	10
25	22X31A0525	10	7	10	10
26	22X31A0526	10	10	10	10
27	22X31A0527	10	6	10	10
28	22X31A0528	10	10	10	10
29	22X31A0529	10	8	10	10
30	22X31A0530	10	9	10	10
31	22X31A0531	10	8	10	10
32	22X31A0532	A	A	A	A
33	22X31A0533	10	6	10	10
34	22X31A0534	9	6	10	10
35	22X31A0535	9	6	10	10
36	22X31A0536	10	8	10	10
37	22X31A0537	10	9	10	10
38	22X31A0538	10	8	10	10
39	22X31A0539	10	8	10	10
40	22X31A0540	10	6	10	10
41	22X31A0541	10	9	10	10
42	22X31A0542	10	6	10	10
43	22X31A0543	10	9	10	10
44	22X31A0544	10	9	10	10
45	22X31A0545	10	8	10	10
46	22X31A0546	10	7	10	10
47	22X31A0547	10	9	10	10
48	22X31A0548	10	8	10	10
49	22X31A0549	10	9	10	10
50	22X31A0550	10	10	10	10
51	22X31A0551	10	8	10	10
52	22X31A0552	10	10	10	10
53	22X31A0553	10	10	10	10
54	22X31A0554	10	8	10	10
55	22X31A0555	9	6	10	10
56	22X31A0556	9	6	10	10
57	22X31A0557	10	6	9	10
58	22X31A0558	10	8	10	10
59	22X31A0559	10	7	10	10
60	22X31A0560	10	9	10	10
61	22X31A0561	10	10	10	10
62	22X31A0562	10	10	10	10
63	22X31A0563	10	7	10	10
64	22X31A0564	10	8	10	10
65	22X31A0565	10	9	10	10
66					

R+O+A : RECORD+OBSERVATION+ATTANDANCE

V+V: VIVA VOICE

E+E+R:EXPERIMENT WRITE UP+EXECUTION+RESULT

Target set by the faculty / HoD	6.00	6.00	6.00	6.00
Number of students performed above the target	62	62	62	63
Number of students attempted	65	65	65	65
Percentage of students scored more than target	95%	95%	95%	97%

CO Mapping with Exam Questions:

CO - 1				
CO - 2				
CO - 3				
CO - 4	Y	Y	Y	Y
CO - 5	Y	Y	Y	Y
CO - 6	Y	Y	Y	Y

CO Attainment based on Exam Questions:

CO - 1				
CO - 2				
CO - 3				
CO - 4	95%	95%	95%	95%
CO - 5	95%	95%	95%	95%
CO - 6	95%	95%	95%	95%

CO	Intrnal practica	E+E+R	ppt	OveralI	Level
CO-1					
CO-2					
CO-3					
CO-4	95%	95%	95%	95%	3
CO-5	95%	95%	95%	95%	3
CO-6	95%	95%	95%	95%	3
Attainment (Internal 2 Examination) =					**3**

Attainment Level	
1	40%
2	50%
3	60%

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

Department of Humanities and Sciences

Course Outcome Attainment (University Examinations)

Name of the faculty :	O. SUBHASHINI	Academic Year:	2022-23
Branch & Section:	CSE -A	Year / Semester:	I/I
Lab Course Name:	ENGINEERING CHEMISTRY		

S.No	Roll Number	Marks Secured	S.No	Roll Number	Marks Secured
1	22X31A0501	50	35	22X31A0535	51
2	22X31A0502	59	36	22X31A0536	47
3	22X31A0503	50	37	22X31A0537	50
4	22X31A0504	59	38	22X31A0538	49
5	22X31A0505	56	39	22X31A0539	51
6	22X31A0506	58	40	22X31A0540	55
7	22X31A0507	51	41	22X31A0541	47
8	22X31A0508	59	42	22X31A0542	52
9	22X31A0509	55	43	22X31A0543	50
10	22X31A0510	49	44	22X31A0544	51
11	22X31A0511	52	45	22X31A0545	58
12	22X31A0512	51	46	22X31A0546	44
13	22X31A0513	49	47	22X31A0547	50
14	22X31A0514	A	48	22X31A0548	47
15	22X31A0515	52	49	22X31A0549	59
16	22X31A0516	53	50	22X31A0550	59
17	22X31A0517	55	51	22X31A0551	51
18	22X31A0518	52	52	22X31A0552	53
19	22X31A0519	53	53	22X31A0553	58
20	22X31A0520	59	54	22X31A0554	59
21	22X31A0521	52	55	22X31A0555	55
22	22X31A0522	49	56	22X31A0556	42
23	22X31A0523	52	57	22X31A0557	46
24	22X31A0524	50	58	22X31A0558	59
25	22X31A0525	48	59	22X31A0559	51
26	22X31A0526	48	60	22X31A0560	52
27	22X31A0527	49	61	22X31A0561	51
28	22X31A0528	50	62	22X31A0562	58
29	22X31A0529	59	63	22X31A0563	53
30	22X31A0530	51	64	22X31A0564	44
31	22X31A0531	59	65	22X31A0565	50
32	22X31A0532	A			
33	22X31A0533	50			
34	22X31A0534	48			

		Attainment Level	% students
Class Average mark	52		
Number of students performed above the target	23	1	40%
Number of successful students	65	2	50%
Percentage of students scored more than target	35%	3	60%
Attainment level	**1**		

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

Department of Humanities and Sciences

Course Outcome Attainment

Name of the faculty	O. SUBHASHINI	Academic Year:	2022-23
Branch & Section:	CSE -A	Year / Semester:	I/I
Lab Course Name:	ENGINEERING CHEMISTRY		

Course Outcomes	1st Internal Exam	2nd Internal Exam	Internal Exam	University Exam	Attainment Level
CO1	3.00		3.00	1.00	2.40
CO2	3.00		3.00	1.00	2.40
CO3	3.00		3.00	1.00	2.40
CO4		3.00	3.00	1.00	2.40
CO5		3.00	3.00	1.00	2.40
CO6		3.00	3.00	1.00	2.40
Internal & University Attainment:			3.00	1.00	
Weightage			70%	30%	
CO Attainment for the course (Internal, University)			2.10	0.30	
CO Attainment for the course (Direct Method)			2.40		

Overall course attainment level	**2.40**

SRI INDU INSTITUTE OF ENGINEERING & TECHNOLOGY

Department of Humanities and Sciences

Program Outcome Attainment (from Course)

Name of Faculty:	O. SUBHASHINI	Academic Year:	2022-23
Branch & Section:	CSE -A	Year / Semester:	I/I
Course Name:	ENGINEERING CHEMISTRY		

CO-PO mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	2					1							
CO2	2	2			1									
CO3	2	1		1	1		1							
CO4	2		2			1								
CO5	2	1					1							
CO6	2	1		1		1	1							
Course	**2.00**	**1.40**	**2.00**	**1.00**	**1.00**	**1.00**	**1.00**							

CO	**Course Outcome Attainment**
CO1	2.40
CO2	2.40
CO3	2.40
CO4	2.40
CO5	2.40
CO6	2.40
Overall course attainment level	**2.40**

PO-ATTAINMENT

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO Attainment	**1.60**	**1.12**	**1.60**	**0.80**	**0.80**	**0.80**	**0.80**					

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