

Maharashtra State Board of Technical Education, Mumbai

LABORATORY ASSIGNMENT /SHEET /JOB /PROJECT ACTIVITY PLANNING (LP)

Academic Year: 2025-26 (EVEN)

Date: 15/12/2025

Institute Name: PPCOE, Karjat

MSBTE Code: 61303

Program and Code: Electrical Engineering (EE)

Course Code & Abbr.: 312308(ASC)

Course Name: APPLIED SCIENCE (ASC)

Name of Faculty: Mr.Walunj

T.A./Mrs.Kharade S.O. Class: EE1K

Semester: 1st **Scheme:** K

Learning Hrs. 60

● Teaching-Learning & Assessment Scheme:

Course Code	Course Title	Abbr	Course Category	Learning Scheme						Credits	Paper Duration	Assessment Scheme										Total Marks
				Actual Contact Hrs/Week			SLH	NLH	Theory				Based on LL & TSL Practical				Based on SL					
									FA-TH			SA-TH	Total		FA-PR		SA-PR		SLA			
				CL	TL	LL	Max	Max	Max			Min	Max	Min	Max	Min	Max	Min				
312308	Applied Science(Civil, Electrical))	ASC	DSC	4	-	4	-	8	4	1.5	30	70*#	100	40	50	20	50@	20	-	-	200	

Abbreviations: CL- Class Room Learning, TL- Tutorial Learning, LL-Laboratory Learning, SLH-Self Learning Hours, NLH-Notional Learning Hours, FA - Formative Assessment, SA -Summative assessment, IKS – Indian Knowledge System, SLA - Self Learning Assessment
Legends: @ Internal Assessment, # External Assessment, *# On Line Examination, @\$ Internal Online Examination

● COURSE LEVEL LEARNING OUTCOMES (COS)

- CO1 - Select relevant material in industries by analyzing its physical properties.
- CO2 - Apply the concept of simple harmonic motion, resonance and ultrasonic sound for various engineering applications.
- CO3 - Apply the concept of modern Physics (X-rays, LASER, Photo sensors and Nanotechnology) for various engineering applications.
- CO4 - Use the relevant metallurgical processes in different engineering applications.
- CO5 - Use relevant water treatment processes to solve industrial problems.
- CO6 - Use appropriate fuel and electrolyte for engineering applications.

● COs, Practical Laboratory Learning Outcome (LLOs) and Mapping:

Pr. No	COs	LLO	Name of Experiments / Assignment / Sheet / Job/ Project Activity	Planned Date A/B/C		Actual date of Performance	Remark
				From	To		
1	CO1	1.1	Determination of Young's modulus of given wire.	A- B- C-	A- B- C-	A- B- C-	

2	CO1	2.1	Comparison of Young's moduli of given materials of wires.	A- B- C-	A- B- C-	A- B- C-	
3	CO1	3.1	Determination of relationship between angle of inclination and downward force using inclined plane.	A- B- C-	A- B- C-	A- B- C-	
4	CO1	4.1	Determination of range of projectile	A- B- C-	A- B- C-	A- B- C-	
5	CO2	5.1	Determination of force constant using helical spring.	A- B- C-	A- B- C-	A- B- C-	
6	CO2	6.1	Determination of velocity of sound using resonance tube method.	A- B- C-	A- B- C-	A- B- C-	
7	CO2	7.1	Determination of acceleration due to gravity by using simple pendulum.	A- B- C-	A- B- C-	A- B- C-	
8	CO2	8.1	Determination of distance of object using ultrasonometer.	A- B- C-	A- B- C-	A- B- C-	
9	CO2	9.1	Determination of velocity of ultrasonic sound waves in different liquids using ultrasonic interferometer.	A- B- C-	A- B- C-	A- B- C-	
10	CO3	10.1	Determination of the dependence of the stopping potential on the frequency of given light source(Virtual Lab)	A- B- C-	A- B- C-	A- B- C-	
11	CO3	11.1	Determination of I-V characteristics of photoelectric cell.	A- B- C-	A- B- C-	A- B- C-	
12	CO3	12.1	Determination of I-V characteristics of LDR.	A- B- C-	A- B- C-	A- B- C-	
13	CO3	13.1	Determination of the divergence of laser beam.	A- B- C-	A- B- C-	A- B- C-	

14	CO3	14.1	Determination of refractive index of glass plate using laser beam. (Virtual Lab)	A- B- C-	A- B- C-	A- B- C-	
15	CO3	15.1	Determination of wavelength of helium neon laser (Virtual Lab)	A- B- C-	A- B- C-	A- B- C-	
16	CO4	16.1	Standardization of KMnO ₄ solution using standard oxalic acid and preparation of Fe alloy sample.	A- B- C-	A- B- C-	A- B- C-	
17	CO4	17.1	Determination of the percentage of iron present in given Haematite ore by KMnO ₄ solution.	A- B- C-	A- B- C-	A- B- C-	
18	CO4	18.1	Determination of percentage of copper in given copper ore.	A- B- C-	A- B- C-	A- B- C-	
19	CO5	19.1	Calculation of total hardness, temporary hardness and permanent hardness of water sample by EDTA method.	A- B- C-	A- B- C-	A- B- C-	
20	CO5	20.1	Determination of the alkalinity of a given water sample.	A- B- C-	A- B- C-	A- B- C-	
21	CO5	21.1	Determination of turbidity of a given water sample by Nephelometric method by using Nephelometer or simulation.	A- B- C-	A- B- C-	A- B- C-	
22	CO5	22.1	Determination of dissolved oxygen in the given water sample.	A- B- C-	A- B- C-	A- B- C-	
23	CO5	23.1	Determination of chloride content in the given water sample by Mohr's method.	A- B- C-	A- B- C-	A- B- C-	
24	CO5	24.1	Determination of pH value of given solution using pH meter and universal indicator.	A- B- C-	A- B- C-	A- B- C-	
25	CO6	25.1	Determination of the moisture and ash content in a given coal sample using proximate analysis.	A- B- C-	A- B- C-	A- B- C-	

26	CO6	26.1	Determination of calorific value of given solid fuel using Bomb calorimeter.	A- B- C-	A- B- C-	A- B- C-	
27	CO6	27.1	Calculate the percentage of Sulphur in a given coal sample by ultimate analysis.(Gravimetric analysis)	A- B- C-	A- B- C-	A- B- C-	
28	CO6	28.1	Determination of conductance of given electrolyte by using a conductivity meter.	A- B- C-	A- B- C-	A- B- C-	
29	CO6	29.1	Determination of specific conductance and equivalence conductance of given salt sample solution.	A- B- C-	A- B- C-	A- B- C-	
30	CO6	30.1	Determination of equivalence point of acetic acid and ammonium hydroxide using conductivity meter.	A- B- C-	A- B- C-	A- B- C-	

. ASSESSMENT METHODOLOGIES/TOOLS

➤ Formative assessment (Assessment for Learning)

- Term Work
- Sheet Submission

➤ Summative Assessment (Assessment of Learning)

- End Term Exam Theory
- Micro-project
- Tutorial Performance

(Name Signature of Faculty)

(Name & Signature of HOD)