

LESSON PLAN

Subject- Applied Chemistry Lab (PR-3)

Branch- Civil Engineering (G-I)

Name of the Faculty- Prasant Behera

Session: 17-08-2026 to 17-04-2027

Class Days: Every Tuesday (01/week)

Total Working Days Available: 31

Total Periods Planned: 31

Lab No.	Date	Day	Experiment / Activity	Type
1	18-08-2026	Tuesday	Introduction Class-1: Lab safety rules, Do's & Don'ts, First aid, Fire extinguisher demo, Lab discipline	Introduction
2	25-08-2026	Tuesday	Introduction Class-2: Familiarization with apparatus - Burette, Pipette, Conical flask, Volumetric flask, Weighing balance, Washing & calibration	Introduction
3	01-09-2026	Tuesday	Introduction Class-3: Familiarization with chemicals - Acids, Bases, Indicators, Storage, Label reading, MSDS, Handling of KMnO ₄ , Oxalic acid, EDTA safely	Introduction
4	08-09-2026	Tuesday	Visual Class-1 (Video): Volumetric analysis techniques - How to titrate, end point detection, use of phenolphthalein, precautions (YouTube/NPTEL videos)	Visual Class
5	22-09-2026	Tuesday	1. Preparation of standard solution of oxalic acid or KMnO ₄	Practical Performance
6	29-09-2026	Tuesday	2. Strength of NaOH by titrating against standard oxalic acid	Practical Performance
7	06-10-2026	Tuesday	3. Standardization of KMnO ₄ & % iron in Hematite ore	Practical Performance
8	13-10-2026	Tuesday	4. Iodometric estimation of copper in copper pyrite ore	Practical Performance
9	27-10-2026	Tuesday	5. Volumetric estimation of Total Acid Number (TAN) of oil	Practical Performance
10	03-11-2026	Tuesday	Visual Class-2: Proximate analysis of coal - Video on moisture & ash estimation, Bomb calorimeter working principle	Visual Class
11	10-11-2026	Tuesday	6a. Total hardness of water by EDTA method	Practical Performance
12	17-11-2026	Tuesday	6b. Alkalinity of water by 0.01M H ₂ SO ₄	Practical Performance
13	01-12-2026	Tuesday	7a. Proximate analysis - Moisture in coal	Practical Performance

14	08-12-2026	Tuesday	7b. Proximate analysis - Ash in coal	Practical Performance
15	15-12-2026	Tuesday	8. Conductivity of water sample	Practical Performance
16	22-12-2026	Tuesday	Visual Class-3: Instrumental analysis - Conductivity meter, Colorimeter, Redwood viscometer, Flash point apparatus working videos + Virtual lab demo	Visual Class
17	29-12-2026	Tuesday	9. Iron content in cement by colorimeter	Practical Performance
18	05-01-2027	Tuesday	10. Calorific value by bomb calorimeter	Practical Performance
19	12-01-2027	Tuesday	11. Viscosity by Redwood viscometer	Practical Performance
20	19-01-2027	Tuesday	12. Flash & fire point by Abel's apparatus	Practical Performance
21	02-02-2027	Tuesday	13. Verify first law of electrolysis of CuSO ₄	Practical Performance
22	09-02-2027	Tuesday	Visual Class-4: Water quality parameters - DO, BOD, COD, TDS, Turbidity, Chlorine - Importance & environmental videos, Real water treatment plant video	Visual Class
23	16-02-2027	Tuesday	14. Construction & emf of Daniel cell	Practical Performance
24	23-02-2027	Tuesday	15. Dissolved Oxygen (DO) in water	Practical Performance
25	02-03-2027	Tuesday	16. BOD in water sample	Practical Performance
26	09-03-2027	Tuesday	17. Dissolved chlorine in water	Practical Performance
27	16-03-2027	Tuesday	18. COD in water sample	Practical Performance
28	23-03-2027	Tuesday	19. Turbidity of water sample	Practical Performance
29	30-03-2027	Tuesday	20. TDS of water sample	Practical Performance
30	06-04-2027	Tuesday	Buffer Revision	Viva Questions
31	13-04-2027	Tuesday	Buffer Revision	Viva Questions

Prasant Behera
Lect.(II) In Chemistry

S. Singh
28.07.2026
HOD
Math & Sc. Dept.

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Name of the Faculty- Prasant Behera

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Class Days: Every Friday (01/week)

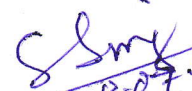
Total Working Days Available: 32

Total Periods Planned: 32

Lab No.	Date	Day	Experiment / Activity	Type
1	21-08-2026	Friday	Introduction Class-1: Lab safety rules, Do's & Don'ts, First aid, Fire extinguisher demo, Lab discipline	Introduction
2	28-08-2026	Friday	Introduction Class-2: Familiarization with apparatus - Burette, Pipette, Conical flask, Volumetric flask, Weighing balance, Washing & calibration	Introduction
3	11-09-2026	Friday	Introduction Class-3: Familiarization with chemicals - Acids, Bases, Indicators, Storage, Label reading, MSDS, Handling of KMnO_4 , Oxalic acid, EDTA safely	Introduction
4	18-09-2026	Friday	Visual Class-1 (Video): Volumetric analysis techniques - How to titrate, end point detection, use of phenolphthalein, precautions (YouTube/NPTEL videos)	Visual Class
5	25-09-2026	Friday	1. Preparation of standard solution of oxalic acid or KMnO_4	Practical Performance
6	09-10-2026	Friday	2. Strength of NaOH by titrating against standard oxalic acid	Practical Performance
7	16-10-2026	Friday	3. Standardization of KMnO_4 & % iron in Hematite ore	Practical Performance
8	23-10-2026	Friday	4. Iodometric estimation of copper in copper pyrite ore	Practical Performance
9	30-10-2026	Friday	5. Volumetric estimation of Total Acid Number (TAN) of oil	Practical Performance
10	06-11-2026	Friday	Visual Class-2: Proximate analysis of coal - Video on moisture & ash estimation, Bomb calorimeter working principle	Visual Class
11	13-11-2026	Friday	6a. Total hardness of water by EDTA method	Practical Performance
12	20-11-2026	Friday	6b. Alkalinity of water by 0.01M H_2SO_4	Practical Performance
13	27-11-2026	Friday	7a. Proximate analysis - Moisture in coal	Practical Performance

14	04-12-2026	Friday	7b. Proximate analysis - Ash in coal	Practical Performance
15	11-12-2026	Friday	8. Conductivity of water sample	Practical Performance
16	18-12-2026	Friday	Visual Class-3: Instrumental analysis - Conductivity meter, Colorimeter, Redwood viscometer, Flash point apparatus working videos + Virtual lab demo	Visual Class
17	01-01-2027	Friday	9. Iron content in cement by colorimeter	Practical Performance
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24	19-02-2027	Friday	15. Dissolved Oxygen (DO) in water	Practical Performance
25	26-02-2027	Friday	16. BOD in water sample	Practical Performance
26	05-03-2027	Friday	17. Dissolved chlorine in water	Practical Performance
27	12-03-2027	Friday	18. COD in water sample	Practical Performance
28	19-03-2027	Friday	19. Turbidity of water sample	Practical Performance
29	26-03-2027	Friday	20. TDS of water sample	Practical Performance
30	02-04-2027	Friday	Buffer Revision	Viva Questions
31	09-04-2027	Friday	Buffer Revision	Viva Questions
32	16-04-2027	Friday	Buffer Revision	Viva Questions


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