

GOVERNMENT POLYTECHNIC, KANDHAMAL

DEPARTMENT OF MATH & SCIENCE



LESSON PLAN
APPLIED CHEMISTRY AND EVS
LABORATORY
FOR
1ST YEAR DIPLOMA STUDENTS
(COMMON TO ALL BRANCHES)

Prepared By : Samit Kumar Bishi

Guest Lecturer (Chemistry)

&

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Government Polytechnic, Kandhamal

LESSONPLAN

Session:2026-27

Course Name: Applied Chemistry and EVS Lab.	Progressive Assessment:25Marks
Course Code: PR-3	Final Exam:25 Marks
Periods per Week: 02	Duration of end Exam:2 Hours
Total Periods:64	No of Credits:01
Duration:17/08/2026 to 17/04/2027	

Periods	Week	Class Day	Topics to be covered
1	1	1	Preparation of standard solution of oxalic acid or potassium permanganate.
2		2	Record writing & Record Verification
3	2	1	To determine strength of given sodium hydroxide solution by titrating against Standard oxalic acid solution using phenolphthalein indicator
4		2	Record writing & Record Verification
5	3	1	Standardization of KMnO ₄ solution using standard oxalic acid and determine the Percentage of iron present in given Hematite ore by KMnO ₄ solution.
6		2	Record writing & Record Verification
7	4	1	Iodometric estimation of copper in the copper pyrite ore.
8		2	Record writing & Record Verification
9	5	1	Volumetric estimation of total acid number (TAN) of given oil.
10		2	Volumetric estimation of total acid number (TAN) of given oil.
11	6	1	Record writing & Record Verification
12		2	Volumetric estimation of a) Total hardness of given water sample using standard EDTA solution.
13	7	1	Volumetric estimation of a) Total hardness of given water sample using standard EDTA solution.
14		2	Record writing & Record Verification
15	8	1	b) Alkalinity of given water sample using 0.01M sulphuric acid
16		2	b) Alkalinity of given water sample using 0.01M sulphuric acid
17	9	1	Record writing & Record Verification
18		2	Proximate analysis of coal a) Gravimetric estimation moisture in given coal sample
19	10	1	Proximate analysis of coal a) Gravimetric estimation moisture in given coal sample
20		2	Record writing & Record Verification
21	11	1	b) Gravimetric estimation ash in given coal sample
22		2	b) Gravimetric estimation ash in given coal sample
23	12	1	Record writing & Record Verification
24		2	Determine the conductivity of given water sample.
25	13	1	Determine the conductivity of given water sample.
26		2	Record writing & Record Verification
27	14	1	Determination of the Iron content in given cement sample using colorimeter.
28		2	Record writing & Record Verification
29	15	1	Determination of calorific value of solid or liquid fuel using bomb calorimeter.

30		2	Determination of calorific value of solid or liquid fuel using bomb calorimeter.
31	16	1	Record writing & Record Verification
32		2	Determination of viscosity of lubricating oil using Redwood viscometer.
33	17	1	Determination of viscosity of lubricating oil using Redwood viscometer.
34		2	Record writing & Record Verification
35	18	1	Determination of flash and fire point of lubricating oil using Able's flash point apparatus.
36		2	Determination of flash and fire point of lubricating oil using Able's flash point apparatus.
37	19	1	Record writing & Record Verification
38		2	To verify the first law of electrolysis of copper sulfate using copper electrode.
39	20	1	To verify the first law of electrolysis of copper sulfate using copper electrode.
40		2	Record writing & Record Verification
41	21	1	Construction and measurement of emf of electrochemical cell (Daniel cell).
42		2	Construction and measurement of emf of electro chemical cell (Daniel cell).
43	22	1	Record writing & Record Verification
44		2	Determination of amount of dissolved oxygen present in a water sample.
45	23	1	Determination of amount of dissolved oxygen present in a water sample.
46		2	Record writing & Record Verification
47	24	1	Determination of amount of BOD present in a water sample.
48		2	Determination of amount of BOD present in a water sample.
49	25	1	Determination of amount of BOD present in a water sample.
50		2	Determination of amount of BOD present in a water sample.
51	26	1	Record writing & Record Verification
52		2	Determination of amount of dissolved chlorine present in a water sample.
53	27	1	Determination of amount of dissolved chlorine present in a water sample.
54		2	Record writing & Record Verification
55	28	1	Determination of amount of COD present in a water sample.
56		2	Determination of amount of COD present in a water sample.
57	29	1	Determination of amount of COD present in a water sample.
58		2	Record writing & Record Verification
59	30	1	Determination of amount of turbidity present in a water sample.
60		2	Determination of amount of turbidity present in a water sample.
61	31	1	Record writing & Record Verification
62		2	Determination of amount of TDS present in a water sample
63	32	1	Determination of amount of TDS present in a water sample
64		2	Record writing & Record Verification

Samit Kumar Singh
Signature of Faculty 30/07/2026


Signature of HOD 30/7/26