				Practical Plan					
Name o	Name of the college: Government College of Arts, Science and Commerce, Sanquelim- Goa								
Name o	Name of Faculty: Dr. Sagar Narayan Patil Subject: Chemistry								
Paper code: CHC-221; 221 (Minor Vocational-1); : Basics of Chemical Laboratory ManagementProgram: SYBScDivision: - Batch 2									
Acaden	nic vear: DEC 20	24- 2025		Semester: IV		Total Lectures: 3	SOh		
Course Objectives: 1. Enable student to identify and classify different glass wares 2. To prepare solution of different concentration and dilution 3. Distinguish between different types of electrodes 4. Acquaint students with hazard symbols and labels. Student Learning Outcome: At the end of the course, students will be able to 1. implement necessary precaution while working in chemical laboratory 2. apply procedure of management, purchase and storage. 3. identify and classify common glassware and apparatus, prepare standard solutions and know the basics of Identify and classify different glasswares 4. Prepare solution of different strength/volume and know the different terms used for labeling concentration. 5. Identify and classify different types electrodes 6. Interpret hazard symbols and labels of supplied commercial chemicals									
Month	Lecture From	Lecture To	No. of Practical allotted	Topic, Subtopic to be covered	Exercise/ Assignment	nt ICT Tools	Reference books		

December	09/12/2024	21/12/24	1	 Identification and classification of glassware 1. To identify and classify different types of flasks and funnels (Minimum four different types of each.) (Description and labeled diagrams expected) 	Diagrams, details etc.	Board	 G.H. Jeffery, J. Bassett, J. Mendham, R. C. Denny.<i>Vogel's</i> <i>Textbook of Quantitative</i> <i>Chemical Analysis</i>, 5th edition, Longman Scientific and Technicals , England.1989. Brian S. Furniss, Antony J. Hannaford, Peter W.G.Smith, Austin R. tatchell.<i>Vogel's</i> <i>Textbook of practical Organic</i> <i>chemistry</i>,5thedition,8thimpression 2011 Publisher-Person education Ltd England 1989.
January	03/01/2025	31/01/2025	4	Identification and classification of glassware 1. To identify and classify different types of flasks and funnels (Minimum four different types of each.) 2. To identify and classify different types of pipettes and burettes (Minimum two different types of each.) 3. Classification, Assembling and Application of condensers-Normal condenser (Liebig Condenser), Double coiled condenser, Hickman distilling head and fractional distillation (Description and labeled	principle, applications	Board, mechanis m drawing, arrows and meaning of the notation.	 G.H. Jeffery, J. Bassett, J. Mendham, R. C. Denny. Vogel's Textbook of Quantitative Chemical Analysis, 5th edition, Longman Scientific and Technicals, England. 1989. Brian S. Furniss, Antony J. Hannaford, Peter W.G.Smith, Austin R. tatchell. Vogel's Textbook of practical Organic chemistry, 5thedition, 8th impression 2011 Publisher-Person education Ltd England 1989.

				diagrams expected) Preparation of solution and dilution 1. Prepare 100 ml of 0.5 N NaOH solution and standardize using 0.5N KHP. Dilute and prepare 100 ml of 0.3N NaOH and standardize to determine correctness of dilution. 2. Prepare 100ml 0.05 M KMnO4and dilute to 0.05 N KMnO4solution.			
February	01/02/2025	28/02/2025	4	 Preparation of solution and dilution 3. Dilute the given standard solution of 0.05 M oxalic acid to 0.02N, 0.025N, 0.03N. 4. Determination of mole fraction of Cu and Cl in a CuCl2. 2 H2O solution (0.010 g CuCl2.2 H2O diluted to 100 ml.) 5. Preparation and dilution of 100 ppm Fe solution using any salt of iron and to dilute to 80 ppm and 50 ppm. Identification and classification of Electrode To identify and classify different types of Reference electrodes (any two) To identify and classify different types of Working electrode (any Two) (Description and labeled diagrams expected) 	14 Mechanism, theory, principle, applications	Board	Listed as above

March	01/03/2025	31/03/2025	4	Identification of labels and Hazard Symbols 1. Draw the label and describe the information on commercial chemical and reagent labels-(Minimum two solids and two liquids) 2. Draw and identify the hazard symbols (ref-Safety datasheet (SDS), Globally Harmonized System (GHS) for hazard communication). Note-Minimum Nine Symbols to be studied. 3. Classification of fire and fire extinguisher (Description and labeled diagrams expected of minimum four types of each).	theory, principle, applications		Listed as above
April	01/04/2025	11/04/2025	2	Revision, practice, VIVA preparations etc.	revisions problems therein	Board	