

Semester Lecture Plan

Name of the college: Government College of Arts, Science & Commerce, Sanquelim-Goa		
Name of Faculty: Dr. Sagar Narayan Patil	Subject: Chemistry	
Paper code: CHC-142 (Skills in Qualitative Organic Analysis)	Program/Course: F.Y. B.Sc. (minor)	Division: -
Academic year: 2026 - 2027	Semester: I	Total Lectures: 15 (Theory)
Course Objectives: 1. To explain the theoretical aspects of qualitative organic analysis 2. To discuss the mechanistic aspects of chemical tests in qualitative organic analysis.		
Course Learning Outcome: The student will be able to 1. Outline the steps for the analysis of an organic compound. 2. Explain the purification techniques and mechanism of the chemical tests for organic compounds 3. Perform and apply the analysis on any given organic compounds		

4. Conclude and correlate the analysis of organic compounds with their structure.

Month	Lectures From	Lectures To	No. of lectures allotted	Topic, Subtopic to be covered	Exercise/Assignment	ICT Tools	Reference books
June	19/06/2026	28/06	02	Purification Techniques: Recrystallisation, distillation, sublimation		Smart board /PPT	Ref 1-4
June-July	30/06/2026	05/07	01	Determination of physical constants of organic compounds- melting point, boiling point		Smart board /PPT	Ref 1-4
July	07/07/2026	12/07	01	Chemical nature of organic compounds: Nature of organic compounds based on physical state of the following compounds: benzoic acid, m-nitroaniline, β -naphthol, acetone, aniline, naphthalene, benzophenone, m-dinitrobenzene (to be shown with structure)		Smart board /PPT	Ref 1-4
July	14/07/2026	19/07	01	Presence of saturated and unsaturated compounds using bromine water, potassium permanganate solution; water solubility of organic compounds (any two water-soluble and water-insoluble compounds)	Assignment 1: Chemical nature classification	Smart board /PPT	Ref 1-4

July-August	21/07/2026	26/07/2026	01	Chemical nature of organic compounds (to be explained with reactions)- water insoluble acid/phenol/base/neutral		Smart board /PPT	Ref 1-4
August	28/07/2026	02/08/2026	01	Chemical nature of organic compounds (to be explained with reactions)- water soluble acid/phenol/neutral		Smart board /PPT	Ref 1-4
August	04/08/2026	09/08/2026	01	Analysis of hetero elements: Detection and presence of hetero elements - N/S/X (to be explained with reactions)		Smart board /PPT	Ref 1-4
August	11/08/2026	16/08/2026	01	Analysis of functional groups: Detection and presence of functional groups – CH(O) acid- salicylic acid, CH(O) phenol- β -naphthol		Smart board /PPT	Ref 1-4
August	18/08/2026	23/08/2026	01	CH(O) neutral- acetone, benzaldehyde, ethyl acetate and ethanol	Assignment 2: Functional group analysis	Smart board /PPT	Ref 1-4
Aug-Sept	26/08/2026	01/09/2026	-	Ganesh Chaturthi break		-	-
September	04/09/2026	06/09/2026	01	CH(O)N acid p-nitrobenzoic acid, CH(O)N phenol -nitrophenol		Smart board /PPT	Ref 1-4
September	08/09/2026	13/09/2026	01	CH(O)N base - nitroaniline, CH(O)N neutral- urea		Smart board /PPT	Ref 1-4

September	15/09/2026	20/09/2026	01	CH(O)N, S neutral- thiourea, CH(O)Cl neutral- chlorobenzene (to be explained with reactions)		Smart board /PPT	Ref 1-4
Sept-Oct	22/09/2026	27/09/2026	01	Revision: Integration of chemical tests for unknown compound analysis	Practice problems	Smart board /PPT	Ref 1-4
October	29/09/2026	04/10/2026	01	Revision: Summary of reactions and mechanistic explanations	Mock test	-	-
October	06/10/2026	11/10/2026	01	Revision		Smart board /PPT	Ref 1-4

Reference Books:

1. Vogel, A.I., Tatchell, A.R., Furnis, B.S., Hannaford, A.J. & Smith, P.W.G., Textbook of Practical Organic Chemistry, Prentice-Hall, 5th edition, 1996.
2. Mann, F.G. & Saunders, B.C. Practical Organic Chemistry Orient Longman, 1960.
3. Pandey, O.P., Bajpai D. N. & Giri S. Practical Chemistry, Revised Edition, (For BSc. I, II, III Year Students of All Indian Universities) S. Chand Company Pvt Limited, 2014.
4. N. K. Vishnoi, Advanced Practical Organic Chemistry, third edition, 2010 .

*** Assessment Rubrics**

Component	Max Marks
ISA 1	5
ISA 2	5
Semester End Exam	20
Total	25

*Best one ISA will be considered