Lecture Plan

Name of the college: Government College of Arts, Science & Commerce, Sanquelim, Goa		
Name of Faculty: Dr. SAGAR N. PATIL	**Subject:Organic Chemistry I**	
Paper code: CHC-202	**Program/Course: S.Y.BSc.**	**Division:**
Academic year: 2025 - 2026	**Semester: IV**	**Total Lectures: 15**
Credits: 3		

Course Objectives:

- To understand the preparation and reactions of carboxylic acids andamines.
- To apply knowledge of UV Visible spectroscopy in calculating absorptionvalues.
- To understand stereochemistry of organic compounds.

Expected Course Outcome:

At the end of the course students will be able to:

CO-1 To understand the fundamentals of structures, chirality, and functional group properties of carboxylic acids and amines.

CO-2 To explain with mechanisms the synthetic methods of preparations of various amines, carboxylic acids and chiral compounds.

CO-3 To apply knowledge of UV-Visible spectroscopy in calculating absorption values and monitoring various reactions of carboxylic acids and amines.

CO-4 To evaluate and analyse different name reactions, stereochemical aspects in order to prepare structurally diverse compounds.

Learning Outcome:

At the end of the course students will be able:

1. To describe the structural features, chirality concepts, and functional group characteristics of carboxylic acids and amines.
2. Illustrate and explain the mechanisms and synthetic routes involved in the preparation of amines, carboxylic acids, and chiral molecules.
3. Apply UV–Visible spectroscopic principles to calculate absorption parameters and monitor chemical transformations of carboxylic acids and amines.
4. Evaluate and analyse various name reactions and stereochemical principles to design and prepare structurally diverse organic compounds.

Month	Lectures From	Lectures To	No. of lectures allotted	Topic, Subtopic to be covered	Exercise/Assignment	ICT Tools	Reference books
December	01-12-2025	23-12-2025	02	**14** **UV –Visible Spectroscopy in Organic Chemistry** Introduction to spectroscopy: UV Spectroscopy:		Smart board, Power point presentation,	[1-3]
January	02-01-2026	31-01-2026	05	Beer-Lambert's law (statement, expression and terms involved), Types of electronic transitions, Intensity of absorption, Chromophores and Auxochromes with examples, λmax, Bathochromic and Hypsochromic shifts, hypochromic and hyperchromic effects.		Smart board, Power point presentation, quiz	[1-3]
February	01-02-2026	28-02-2026	04	Visible Spectroscopy: Effect of conjugation on colour: w.r.t benzene, nitrobenzene, *p*-nitroaniline and *β*-Carotene. Application of Woodward - Fieser rules for calculation of λmax for the following systems: *α*, *β* unsaturated aldehydes, ketones. Conjugated dienes: alicyclic, homoannular and heteroannular,	ISA II: Written test	Smart board, Power point presentation, Google classroom, Google quiz	[1-3]
March	01-03-2026	31-03-2026	04	extended conjugated systems (aldehydes, ketones and dienes) (problems to be solved). Applications of UV-Visible spectroscopy.	ISA III: Quiz	PROBLEMS solving	[1-3]

References:

[1] Morrison, R.T. & Boyd, R.N. Organic Chemistry, Pearson, 2010.

[2] Bahl, A. & Bahl, B.S. Advanced Organic Chemistry, S. Chand, 2010.

[3] Singh, J. & Yadav, L. Undergraduate Organic Chemistry, Vol 1, 6th edition, 2004

* Assessment Rubrics	
Component	**Max Marks**
ISA	15
Semester End Exam	60
Practical	25
Total	100