Semester Lecture Plan

Name of College: Government College of Arts, Science & Commerce, Sanquelim Goa

Name of Faculty: Dr. Suphala Pujari	**Subject: Zoology**	
Paper code: ZOO - 221	**Program/Course: S.Y. B.Sc.**	**Division: A**
Academic year: 2024-2025	**Semester: IV**	**Total Lectures: 15**

Course Objectives:

1. Understanding the principles, working mechanisms.
2. Applications of various Bio-instruments.
3. Familiarising the principles, operation, and applications of Imaging, separation and spectrophotometric techniques
4. Imparting hands-on experience with instruments

Course Learning Outcome:

At the end of this course, students will be able to

1. Understand the importance of instrumentation in biological research.
2. Explain the principles and applications of spectroscopic techniques and microscopy.
3. Apply a range of spectroscopic, chromatographic, electrophoretic, and microscopic techniques to analyze and characterize biomolecules, demonstrating a foundation in bioanalytical methods.
4. Critically evaluate experimental setups, troubleshoot potential issues, and adapt bioinstrumentation techniques to address specific research questions.

Month	Lectures From:	To:	No. of lectures allotted	Topic, Subtopic to be covered	Exercise/ Assignment	ICT Tools	Reference books
Jan/ Feb 2025	06/01/2025	11/01/2025	1	Chromatography: Chromatographic techniques: Principle and applications -Paper Chromatography		Power point	• L. Veerakumari, Bioinstrumentation. PHI Learning Pvt. Ltd., 2019. • N. Arumugam, V. Kumaresan, Biophysics and Bioinstrumentation. Anuradha Agencies, 2015.
	13//01/2025	18//01/2025	1				
	20/0120/25	25/0120/25	1			Power point	
	27/01/2025	01/02/2025	1	Chromatography: Chromatographic techniques: Principle and applications -Thin Layer Chromatography		Power point	
Feb 2025	03/02/2025	08/02/2025	1				
	17/02/2025	22/02/2025	1	Chromatography: Chromatographic techniques: Principle and applications -Thin Layer Chromatography		Power point	

Feb / March 2025	24/02/2025	01/03/2025	1	Chromatography: Chromatographic techniques: Principle and applications -Column Chromatography		Power point	
March 2025	03/03/2025	08/03/2025	1			Power point	
	10/03/2025	15/03/2025	1	Chromatography: Chromatographic techniques: Principle and applications - Gel filtration Chromatography		Power point	
	17/03/2025	22/03/2025	1	Chromatographic techniques: Principle and applications Ion exchange chromatography		Power point	
March/ April 2024	24/03/2025	29/03/2025	1	Chromatographic techniques: Principle and applications - HPLC		Power point	
	31/03/2025	05/04/2025	1	Basic principles of electrophoresis.		Power point	
	07/04/2025	11/04/2025	1	Sonication			

*** Assessment Rubrics**	
Component	**Max Marks**
ISA 1	**7.5**
ISA 2	**7.5**
ISA 3	**7.5**
Practical	25
Semester End Exam	60

Dr. Suphala Pujari