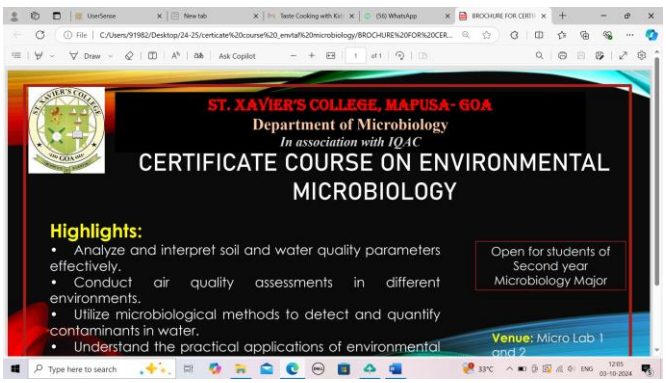
ST. XAVIER'S COLLEGE, MAPUSA GOA

Report of Activity conducted in the Academic Year 2024-25

Name of Activity	CERTIFICATE COURSE ON ENVIRONMENTAL MICROBIOLOGY
Date/ Duration	31.8.24 to 4.10.24
Venue	Microbiology Lab 1 and 2
Name of organizing Department/Cell	Department of Microbiology.
In collaboration with	
Name/s of Faculty Coordinator	Dr. Sheryanne Velho Pereira
Stratum of Event	College
Name & details of Resource Person/s if any	Ms. Katelyn Gonsalves, Ms. Ruella D'Souza Mr. Siddhesh Menon, Dr. Sheryanne Velho Pereira, Dr. Trelita de Sousa, Dr. Nadine de Souza.
Report	**Objectives:** By the end of the course, participants will be proficient in: • Analyzing soil and water quality parameters. • Conducting air quality assessments. • Utilizing microbiological methods for coliform detection of water. • Understanding the applications of environmental microbiology in real-world scenarios. The Certificate Course on Environmental Microbiology provided hands-on training and theoretical knowledge in soil, air, and water microbial analysis, emphasizing environmental sustainability. **Module 1: Study of the Soil Profile** The first module focused on studying soil layers and their composition. Through field studies, students examined various soil types, gaining an understanding of their structure and how it impacted soil health. **Module 2: Determination of pH of Soil Samples** In this module, students measured the pH levels of different soil types (rocky, sandy, and clayey) to assess their acidity or alkalinity. The objective was to determine how soil pH affected usability for agricultural or environmental purposes. **Module 3: Determination of the Moisture Content of Soil** This module taught students how to assess the moisture content

	of different soil samples. The aim was to determine the suitability of these soils for different uses, particularly in agriculture. **Module 4: Estimation of the Water Holding Capacity of Soil** Students estimated the water retention capacity of various soil types, a critical factor for irrigation and environmental management. The analysis covered rocky, sandy, and clayey soils. **Module 5: Air Quality Assessment** In this module, students assessed microbial air quality in different environments within the institution. The study included microbiological assessments in labs and canteens to ensure healthy air quality. **Module 6: Water Quality and Microbial Analysis** Students focused on detecting coliform bacteria in water using the Most Probable Number (MPN) method. Various water sources, such as water purifiers and wells, were tested to ensure microbial safety. **Module 7: Routine Analysis of Potable Water** This module covered the routine analysis of drinking and well water, focusing on detecting coliform bacteria. The presumptive, confirmed, and completed tests were conducted to ensure the water was safe for consumption. **Module 8: Setting up of Winogradsky's Column** Students created a Winogradsky column to study microbial diversity and metabolic activities in water and sediment samples over time. The module aimed to provide insights into microbial ecosystems. **Module 9: Field Trip to Goa Dairy plant** The final module included a field trip to a sewage treatment plant of goa Dairy Kurti Ponda, where students observed the microbial and chemical processes involved in sewage treatment. They collected data on how microbes played a vital role in waste degradation and water purification. **Outcome:** This course offers a comprehensive approach to environmental microbiology, combining theoretical knowledge with practical applications. Participants will gain valuable insights into the microbial aspects of environmental management, preparing them for future challenges in this field. **No of participants: 53**
Brochure/Poster	

Photographs	  

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