

**St. Xavier's College (Autonomous), Ahmedabad**

**Syllabus of Semester – I of the following department under Faculty of Science based on Under Graduate Curriculum Framework - 2023 to be implemented from the Academic Year 2023-24.**

**FACULTY OF SCIENCE**

**DEPARTMENT OF BOTANY**

Course	Title	Content	Hours/week	Credit
SEC	Botany Lab operations and Safety Measures	U-1: Botany Lab operations U-2: Botany Safety measures	4 hrs	2

**BSc. (Hons.) Botany**

**Category – IV**

**Skill Enhancement Course: Botany Lab Operations and Safety Measures**

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

Course Title & Code	Credit Distribution of The Course			Eligibility Criteria	Prerequisite(s) of the Course (if any)
	Lecture	Tutorial	Practical / Practice		
Botany Lab Operations and Safety measures (BO-1650)	2	0	0	10 + 2 from a recognized board in any stream	Basics knowledge of Biology

**LEARNING OBJECTIVES (LO)**

On completion of this course, the student will be able-

**LO1:** To understand the basic biological laboratory practices and operations.

**LO2:** To gain knowledge about important safety measures in all aspects for Botany laboratory operation and safety measures.

## **COURSE OUTCOME(CO)**

On Completion of this course, the student has been able to-

**CO1:** Develop skills as required for developing a functional Botany Laboratory.

**CO2:** Explain various Botany safety measures and discuss minimum requirement to maintain Biosafety level in laboratory.

### **Unit 1: Botany Lab operations**

**(15 L)**

1. Introduction to Botany Laboratory: Overview of a Botany laboratory, Model layout of Biology Laboratory.
2. Infrastructure needed for Botany Laboratory, Good laboratory practice and Good documentation practice.
3. Minimum requirement of, equipment / items for a Botany laboratory.
4. Maintenance of discipline and cleanliness in the laboratory.

### **Unit 2: Botany Safety measures**

**(15 L)**

1. General safety rules; General Lab behaviour and work procedure for students.
2. Lab Standard Operations Procedure (SOP): Personal safety, Lab environment, standard disposal practices, chemical hazardous material disposal, general garbage disposal.
3. Handling: chemicals and plant materials.
4. Biosafety level (BSL); dress code and Personal Protective Equipment (PPE).
5. Safety symbols, fire safety and Emergency Response Preparedness.

### **Suggestive Reading:**

- Biology Laboratory Manual, Darrell S. Vedopich, McGraw Hill, 11<sup>th</sup> Edition, 2016
- Laboratory biosafety manual by Biosecurity and Health Security Protection EPP, Viet Nam, World Health Organization, 4<sup>th</sup> Edition, 2020
- Plant Micro technique and Microscopy by A.L. Kothari, R. K. Sharma, and A. K. Sharma
- Biological Science by Scott Freeman, Kim Quillin, Lizabeth Allison, and Michael Black
- Essentials of laboratory safety by Fredrick M. Latterell
- Biosafety in the laboratory: Prudent practices for the handling and disposal of infectious materials By National Research Council
- Laboratory safety for biotechnology and laboratory classes” By William M. Sanders.

### **Suggested Online Links/Readings:**

<https://swayam.gov.in>

[www.ncert.in](http://www.ncert.in)

<https://books.google.co.in>

**Pedagogy:**

1. Lecture method with teaching aids.
2. Audio-Visual Teaching mode with Projector Method.
3. Dialogue and context-based class.
4. Assignments, Learning seminar, Class Test etc.
5. Open Online Sources and Tutorials

**MODE OF EVALUATION:**

ASSESSMENT	MARKS
INTERNAL	
Attendance	05
Assignments	05
Continuous Internal Assessment I and II	15
TOTAL	25 marks
EXTERNAL	
End Semester Exam	25 marks

Students will prepare and present (in pairs) a Submission related to the topic of Assignment on allotted topics. These Submission will be presented in form of PPT/ Activity/ Hand written notes etc. Points for evaluation: Presentation (20%) + Content (20%) + explanation (20%) +Creativity (20%) + Overall impression (20%).