**Title of Skill Course: Biosafety consultant**

1. Department: Department of Microbiology
2. Title: Biosafety Consultant
3. Sector: Life Sciences
4. Year of implementation: 2024

Course Structure

| Skill Level | Theory Hours | Practical Hours | Total Hours | Credits | No. of students in batch |
|---|---|---|---|---|---|
| 7 | 15 | 30 | 45 | 02 | 30 |

**Syllabus**

**Course Objectives:**

**Students should be able to**

1. Understand Biosafety Concerns guidelines.
2. Understand Lab and personal safety.

**Theory Syllabus (Contact Hrs: 15, Credits: 01)**

**Unit I: Microbiological risk assessment**

Specimens for which there is limited information

Risk assessment and genetically modified microorganisms

**Basic laboratories Biosafety**

Laboratory design and facilities

Laboratory equipment

Waste handling

Chemical, fire, electrical, radiation, and equipment safety

**Unit II: Biosafety Guidelines**

1. Biosafety guidelines and regulations ((National and International)
2. Living modified organisms (LMOs)- Concerns and Challenges
3. Environmental release of GMOs-Risk Analysis, Assessment, management and communication
4. Introduction of the National Accreditation Board for Testing & Calibration Laboratories (NABL)

**Practical Syllabus (Contact Hrs: 30, Credits: 01)**

List of Experiments

1. Study of Microbiology Good Laboratory Practices
2. Study of Personal Protection in the lab
3. Study of Stock Culture maintained in the lab
4. Study of quality control procedures for the handling and storage of biological materials
5. Study of bio-safety concerns at the level of institutions
6. Study of Principles and functions of Microbiology Safety Cabinets
7. Study of decontamination of microorganisms
8. Study of bio-safety concerns at the level of institutions and society with special emphasis on Indian concerns

Case study/ Field Visit/ Industrial Visit

**Course Outcomes:**

Students will be able to

1. Best practices to minimize the risk to students and the community
2. Basic laboratories biosafety

**Reference Books:**

1. Fleming, D.A., Hunt, D.L., Biotechnology and Safety Assessment (3rd Ed) Academic press, 2000. ISBN-1555811804,9781555811808.
2. Thomas, J.A., Fuch, R.L., Biotechnology and safety assessment (3rd Ed). CRC press, Washington, 1999. ISBN: 1560327219, 9781560327219
3. Guidelines for Biosafety in Teaching Laboratories, AMERICAN SOCIETY FOR MICROBIOLOGY, 2019.
4. Rajmohan Joshi Ed., Biosafety and Bioethics. Isha Books, Delhi, 2006.
5. Goel D &Prashar S, IPR, Biosafety and Bioethics. Pearson, 2013.

**BOS Sub Committee:**

1. Chairman- Ms. S.R. Inje
2. Member- Ms. P.V. Mali

**Expert:**

1. Name of Academic Expert- Dr. A. R. Jadhav
2. Name of Industrial Expert- Mr. Sandip Babar