

Prospectus

Certificate Course in Biosafety and Biosecurity

**Conducted by the Department of Microbiology, Faculty of Medical Sciences,
University of Sri Jayewardenepura**

Introduction

Biosafety is an integral process in clinical and research laboratories that ensures safety of the laboratory staff. Laboratories are special type of work environments that should function and supervised with care. A laboratory accident or laboratory-acquired infection could affect not only the laboratory staff but also other hospital staff, patients and other staff in the facility. Proper training of staff in biosafety and biosecurity is not achieved by health care institutions and research institutions in most of the instances hence accidental exposure to harmful substances is frequently reported.

Faculty of Medical Sciences, University of Sri Jayewardenepura is conducting a Certificate Course on Biosafety and Biosecurity to educate the laboratory staff and develop the skills to carry out correct practices and attitudes in the clinical and research laboratories thereby ensuring safe working environment preventing laboratory accidents and laboratory-acquired infections. Further, this will help fulfill the long-felt need of training in biosafety and biosecurity which is highly essential in the country.

Objective of the course

To improve knowledge and skills on biosafety and biosecurity among staff in clinical and research laboratories and to make initial managements in hazardous situations.

Target group

Doctors, research officers and students, laboratory managers, medical laboratory technologists, safety officers and healthcare administrators will be enrolled to improve knowledge and skills on biosafety and biosecurity.

Learning outcomes

At the completion of this course the participants will be able to,

- gain knowledge in biosafety and biosecurity and apply them in their work settings
- identify potential hazardous biological materials and the risks associated with them
- identify procedures and practices in work environment that increase the risk of laboratory associated infections
- acquire the knowledge of safe handling of chemicals, fire, electricity and radiation in laboratories
- select appropriate measures to assess and minimize risk and to protect against or prevent exposure
- to gain knowledge in initial management in emergency situations such as emergency spills and other accidents in the laboratory

Requirements for enrolment

Candidates should have passed the GCE (Advanced Level) Examination

or

Minimum of 2 years work experience in the relevant field.

All applicants should have a credit pass in English at the GCE (Ordinary Level) examination.

Admission process

A duly completed application form should be submitted with documentary evidence of qualifications.

The first 100 applicants according to the ranking order will be selected and the course will be started with a minimum number of 25 registrants.

Time duration

Approximately 55 hours online learning over 4 months

Delivery mode

The main method of delivery will be online learning through direct discussions with resource persons. Video clips and practical sessions with role play will be provided.

Course fee

Local applicants – SLR 10,000.00

Overseas applicants – USD 250

Examination fee – SLR 3000.00

Course Coordinators

Dr. Jananie Kottahachchi - Department of Microbiology, Faculty of Medical Sciences, University of Sri Jayewardenepura

Dr. Thushari Dissanayake - Department of Microbiology, Faculty of Medical Sciences, University of Sri Jayewardenepura

Prof. Neluka Fernando - Department of Microbiology, Faculty of Medical Sciences, University of Sri Jayewardenepura

Orientation

One-day orientation will be conducted to provide an introduction to the certificate course.

Course content

The course will be conducted in three modules.

Assessments

- Formative assessments (assignments) will be conducted at the end of the each module.
- End of the course assessment will include theory examination and practical/ (e.g. video clip).

Those who score equal or more than 50% will be awarded the certificate of successful completion of the course.

Annexure 1

No	Module	Content	Allocated time
1	1.1. Introduction to biosafety and biosecurity	1.1.1. Introduction to biosafety 1.1.1.1. Risk Groups of microorganisms 1.1.1.2. Laboratory acquired infection 1.1.1.3. Control measures- Introduction	7hrs – Lectures 2 hrs – On line discussions (9 hours)

		(Engineering control, Practices and procedure control, Administrative control, PPE) 1.1.2. Introduction to biosecurity 1.1.2.1. International biosafety and biosecurity standards 1.1.2.2. Biological weapon convention	
	1.2. Design and layout of laboratories	1.2.1. Principles of commission and certification of laboratories 1.2.2. Bio-safety levels 1 to 4	2 hrs – Lectures 1 hr – On line discussions (3 hours)
	1.3. Good biosafety practices and techniques	1.3.1. Procedures related to safety measures 1.3.1.1. Safe use of sharps 1.3.2. Good laboratory practices 1.2.3. Safety of the laboratory worker 1.2.4. Safe transport of infectious substances	5hrs – Lectures 2 hrs – On line discussions 2 hrs – SGD (9 hours)
2	2.1. Primary containment equipment (PPE) and other safety equipment	2.1.1. Safety equipment 2.1.1.1. Personal protective equipment 2.1.1.2. Biosafety cabinets 2.1.1.3. Emergency showers and eyewash stations 2.1.2. Certification and maintenance of equipment (autoclave, centrifuge)	4hrs – Lectures 1 hr – On line discussions (5 hours)
	2.2. Administrative control	2.2.1. Documentation and document control 2.2.1.1. Preparation of SOP 2.2.2. Implementation of programmes 2.2.2.1. Vaccination programme, Medical surveillance and occupational health programme, Exposure management programme, Accident /incident programme 2.2.3. Laboratory commissioning and certification 2.2.4. Laboratory safety audits, quality control and compliance testing 2.2.5. Emergency procedures in the laboratory 2.2.6. Biosafety committee	6hrs – Lectures 2 hrs – On line discussions (8 hours)
3	5.1. Waste management and spill management	5.1.1. Waste identification 5.1.2. Treatment of waste and disposal 5.1.3. Spill management	3hrs – Lectures 2 hrs – On line discussions (5 hours)
	5.2. Risk assessment	5.2.1. Identification of hazards 5.2.2. Risk evaluation	4 hrs – Lectures 2 hrs – On line

		5.2.3. Quantifying and monitoring risk	discussions (6 hours)
	5.3. Discussion of scenarios	5.3.1. Discussion of case scenarios	(3 hours)
	5.4. Other common hazards in a laboratory	5.4.1. Chemical safety 5.4.2. Electrical and fire safety 5.4.3. Radiation protection 5.4.4. Safety in molecular laboratory 5.4.5. Pest control	5hrs – Lectures 2 hrs – On line discussions (7 hours)