CLUSTER UNIVERSITY SRINAGAR

SYLLABUS (FYUP UNDER NEP 2020)

Offered By Department of Biotechnology, Biochemistry and Clinical Biochemistry

Semester 1st Skill Enhancement Course (SEC)

Course Title: Lab Technician/Assistant-I

Course Code: LFS/Q0509 (UGBTC23S103) **Max. Marks 100**
Credits: 4 (Theory: 1, Practical: 3) **Theory: 25; Min Marks: 10**
Contact Hrs: 105 (Theory: 15, Practical: 90) **Practical: 75, Min. Marks: 30**

Objectives:

-To perform the processing of the laboratory glassware/plastic-ware for experimentation.
-To demonstrate how to handle, label, and store materials/ chemicals while maintaining records.
-To maintain a hygienic, clean, and contamination-free work area and hoods in laboratory.

Training Outcomes:

After completing this programme, candidates will be able to:
-Explain the Life Science industry and its applicable regulations.
-Perform the processing of the laboratory glassware/plastic-ware for experimentation.
-Demonstrate how to handle, label, and store materials/ chemicals while maintaining records.
-Explain how to maintain a hygienic, clean, and contamination-free work area and hoods in laboratory.
-Demonstrate ways to coordinate with chemist/researchers and cross-functional teams.
-Set up experiments in a wet lab under the guidance and supervision of the QC team/ Research teams in compliance with Good Laboratory Practices (GLP) and Standard Operating Procedures (SOP).
-Set up for scale-up operations in an R&D/Kilo lab under the guidance and supervision of researchers in the Synthesis R&D/Kilo lab in compliance with Good Laboratory Practices (GLP) and SOP.

Unit I

Introduction to Life Sciences industry and the job role I: Life Sciences industry in Indian and global context, regulatory authorities and local rules and regulations in the context of the R&D wet lab and Scale-up laboratory, laboratory functions in a life sciences organization, Good Laboratory Practices (GLP), Good Manufacturing Practices (GMP), and good documentation practices (GDP).

Unit II

Introduction to Life Sciences industry and the job role II: Laboratory-related guidelines of National Accreditation Board (NABL) and WHO (World Health Organization), quality management systems guidelines from ISO-9000, ISO-14001, OHSAS-18000, ICH Q7 and 21 CFR; organizational structure and employment benefits in the Life Sciences Industry, role of a Lab Technician.

Unit III

Processing of glassware/plastic-ware used in a lab: Characteristics and compatibility of detergents with area water, laboratory ware, and equipment, steps and solutions for preparation and testing of reagent water in the laboratory as per SOP, standard operating procedures (SOP) and regulatory guidelines for the use of solvents and chemicals during cleaning and washing, principles of autoclave for drying and sterilization of the glassware, safety measures to be taken while handling any accidental exposure.

Unit IV

Storage and handling of chemicals: Properties of all chemicals/reagents/solutions used in the laboratory, use of Material Safety Datasheets (MSDS) for each chemical, methods of routine lab maintenance and use of lab equipment, process of inspecting washed laboratory-ware and equipment for acid/reagent residues.