

Course Code	Course Name	Credits
26ZY955	LAB TECHNOLOGY	04

Course Objectives

- To understand laboratory techniques and procedures.
- To study laboratory instruments and maintenance.
- To develop knowledge on sample collection and analysis.
- To understand biosafety and quality control.
- To enhance practical skills in laboratory technology.

Learning Outcomes

- Explain laboratory techniques and procedures.
- Identify laboratory instruments and their applications.
- Demonstrate sample preparation and analysis.
- Analyze laboratory results accurately.
- Apply biosafety and quality control measures.

Unit 1 - Introduction to Laboratory Technology (12 Hrs.)

Laboratory organization; safety measures; sterilization and disinfection techniques.

Unit 2 - Laboratory Instruments (12 Hrs.)

Microscopes, centrifuges, spectrophotometers and incubators; calibration and maintenance.

Unit 3 - Sample Collection and Processing (12 Hrs.)

Collection and preservation of biological samples; staining and culture techniques.

Unit 4 - Diagnostic and Analytical Techniques (12 Hrs.)

Biochemical analysis; hematological techniques; molecular methods.

Unit 5 - Quality Control and Applications (12 Hrs.)

Quality assurance; laboratory records and ethics; applications in diagnostics and research.

Reference Books:

1. Cheesbrough, M. (2018). Laboratory Practice. Cambridge University Press.
2. Bancroft, J.D. (2019). Histological Techniques. Elsevier.
3. Wilson, K. (2009). Molecular Biology Techniques. Cambridge.
4. Khandpur, R.S. (2018). Biomedical Instrumentation. McGraw Hill.
5. Plummer, D.T. (2016). Practical Biochemistry. McGraw Hill.

Websites and eLearning Sources:

1. <https://www.ncbi.nlm.nih.gov/>
2. <https://www.easybiologyclass.com/>
3. <https://www.biologydiscussion.com/>

