By the end of this unit you should be able to:

Laboratory techniques for biologists

1. State that substances, organisms, and equipment in a laboratory can present a hazard.
2. Carry out a risk assessment by identifying control measures to minimise the likelihood of harm.

Liquids and solutions

1. Describe the method and uses of linear and log dilution.
2. Produce a standard curve to determine an unknown concentration of a sample.
3. Describe the use of buffers to control pH.
4. Describe how to use a colorimeter to quantify concentration and turbidity of a sample.

Separation Techniques

1. Explain the use of a centrifuge in separating substances.
2. Describe the use of paper and thin layer chromatography.
3. Outline the principle of affinity chromatography.
4. Describe the process of gel electrophoresis.
5. State that SDS-PAGE separates proteins by size alone.

Detecting protein using antibodies

1. State that immunoassay techniques are used to detect and identify specific proteins.
2. Describe an immunoassay technique.
3. Explain how using the Western blotting technique can identify proteins

Microscopy

1. Describe the differences between bright-filed and florescence microscopy.

Aseptic technique and cell culture

1. Outline the purpose of aseptic techniques and give examples.
2. Explain the role of growth factors in medium.
3. Describe the differences between primary cell lines and tumour cells lines.
4. Explain the density of cells in culture can be estimated using a Haemocytometer.
5. State that vital staining is required to identify and count viable cells.