

UNIVERSITY OF NAIROBI
SCHOOL OF BIOLOGICAL SCIENCES
SBL 202- LABORATORY TECHNIQUES

COURSE OUTLINE

1. Principles of biological and biochemical investigations.
 Safety in the biological laboratory.
2. Introduction to instrumentation in the biology laboratory.
3. Handling of laboratory vertebrates and invertebrates.
 Guidelines on experimentation on animals.
 Introduction to biological assays, dosages in laboratory animals.
4. Measurement of PH and preparation of buffers.
5. Spectrophotometric techniques, Flame spectrophotometry.
6. Centrifugation techniques in biology:
 Differential centrifugation, Preparative centrifugation,
 Density gradient centrifugation, Analytical ultracentrifugation.
7. Chromatographic techniques:
 Partition, Permeation, Adsorption chromatography
 Column, TLC, GLC (fid,ecd), HPLC, Ion exchange chromatography,
 Affinity chromatography, Gel filtration,
8. Electrophoretic techniques;
 Paper, Gels, Immunoelectrophoresis, Isoelectric focussing.
9. Radioisotope techniques:
 Radioimmunoassay
10. Freeze-drying.
11. Introduction to enzyme assays.
 Elisa, Immunofluorescence methods.
 Introduction to cell culture techniques.

References:

1. Williams B. L. and Wilson K. (1975). Principles and techniques of practical Biochemistry. Edward Arnold. London.
2. Drew, R.T. and Laskin, S. (1973). Methods of animal experimentation. New York Academic Press.
3. Dòmour F.E. and Blood, F.R. (1954). Manual for laboratory work in physiology. The University of Chicago Press. Chicago, Illinois.
4. Kelly, P.J., Millican, K.G, Organ, J.P. (1988). The principles of Animal Technology I. Publ. Institute of Animal Technology. Oxford, United Kingdom.
5. Roitt I. M. (1984) Essential Immunology. Blackwell Scientific Publisherrs. Oxford, London
6. Phytochemical Methods. *Harbourne.*