

**MCB 303: Microbiological Research techniques (2 Units)**

**LECTURERS IN CHARGE: DR.S.O.KAREEM, PROF.T.O.S.POPOOLA AND PROF. I. AKPAN**

**COURSE CONTENT**

Principles of scientific research: Problem identification: Formulation of hypothesis; Types of research (surveys, observations etc); Experimental design of research: Treatment and comparison of data; Sample collection, preparation and processing; Microbial systematic and taxonomic methods (numerical, phenotypic, molecular, chmo-tazonomy). Principles of analytical measurements: Common categories of instruments; Identification of components and simple repairs; Understanding measurement principles; Spectrometry, Electrophoresis; Chromatographic and other separation techniques; Fundamental microbiological methods: aseptic technique, culture methods; microscopy, metabolic and physiological test: Colorimetry and centrifugation; Practical to comprise hands-on experience with analytical instruments used in microbiology research and clinical labs; statistical analyses; preparation of reports.