Master of Science in Biochemistry

Biochemistry is a subject in life sciences that aims at understanding the molecular basis of organism life. It is a multi-disciplinary subject that focuses on structure and function of molecules as well as their interplay to create the phenomenon of life.

At advanced level, relevant areas of this subject are selected in an effort to provide knowledge appropriate to attainment of capacity directed towards providing local solutions to problems of food security and health. Biochemistry and Molecular biology are covered adequately in this programme to provide competency that will contribute towards improving character of bioproducts, thus assisting to minimize problems of food security.

Similarly the study of molecular basis of the ongoing struggle between higher organisms and disease is incorporated to facilitate better understanding of disease. It is envisaged that from this effort, more effective and specific treatment approaches will be developed that greatly reduce health related problems. The students will enhance their practical and theoretical understanding of Biochemistry and Molecular Biology, Biotechnology and Molecular Medicine.

COURSE OBJECTIVES

1. To provide students with advanced knowledge in Biochemistry and Molecular Biology.
2. To provide students with practical skills in relevant areas of applied Biochemistry
3. To expose students to recent advances in essential areas of applied Biochemistry.
4. To provide students with adequate research skills necessary for searching, analysing and presenting biological data.

COURSE JUSTIFICATION

Kenya, like other developing countries requires to develop adequate scientific base in order to find effective and locally relevant solutions to problems of health, food security and environmental protection. Life sciences research therefore, remains an important area which continues to play a facilitative role.

Resultant from this effort, Biochemistry has advanced to include areas of Molecular Biology, Biotechnology, Bioinformatics and Molecular Medicine. Research arising from these areas has

contributed immensely towards enhancement of food security, environmental protection and improved health and others thereby contributing towards achievement of Millennium Development Goals.

Courses on the above said areas of biochemistry have been developed and included in this programme making it unique among other similar programmes offered in the country. It is envisaged that students graduating from this programme will attain the necessary competency to face the challenges that are abound in local and international research and academic arenas where their contribution is greatly needed.

10.0 Course Distribution

Core Units

HBB 3100 Research Methodology

HBB 3101 Advanced Molecular Biology

HBB 3102 Bioinformatics

HBB 3103 Advanced Protein Biochemistry and Enzymology

HBB 3104 Biochemistry of Nucleic Acids

HBB 3121 Advanced Biochemical Techniques and Instrumentation

Four Units MUST be selected from the following;

HBB 3105 Biochemistry of Mammalian parasites

HBB 3106 Medical Biochemistry

HBB 3107 Nutritional Biochemistry

HBB 3108 Plant Biochemistry

HBB 3109 Advanced Biotechnology

HBB 3110 Molecular Entomology

HBB 3111 Principles of Molecular Epidemiology

HBB 3114 Principles of Molecular Medicine