

are indispensable in clinical diagnosis. DNA probes are important in the diagnosis of genetic disorders, infectious diseases and cancers. Recombinant DNA technology is being used to produce valuable proteins like insulin, and is also important in agriculture.

Fourth, the rapid development of powerful biochemical concepts and techniques in recent years has enabled investigators to tackle some of the most challenging and fundamental problems in biology and medicine.

At Makerere University, biochemistry as an undergraduate degree subject has also developed with the rapid growth in knowledge and activity. Attempts are made to remain abreast with developments in biochemistry giving students training that is practical and relevant to the needs of the country.

General Aims and Objectives

The general aims and objectives of undergraduate training in biochemistry in this department can be summarised as:

1. Equipping the student with a basic understanding of biochemistry;
2. Training biochemists that think independently but work collaboratively with the colleagues in the advancement of biochemical knowledge;
3. Providing students with the skills of identifying and solving problems relevant to the needs of the country;
4. Encouraging students to identify community concerns which are related to biochemistry
5. Giving the students the necessary practical training to achieve the above aims.

Programme Structure

The course was arranged in such a way that the introductory and metabolic aspects that are central to biochemistry are dealt with in the first two semesters. The core courses in the second and third years cover more specialised aspects of biochemistry.

The load is lower in the first two semesters to allow for other subjects that the student is interested in taking or “exploring”. The time can also be used to cover the Faculty’s core curriculum and any other remedial courses.

The total credit units (CU) of the core courses for the Biochemistry major are 59. A student majoring in biochemistry will undergo an eight weeks industrial training at the end of second year and also he/she has to take at least two electives in the third year.

Summary of the Biochemistry Major Programme

All courses in italics and bolded are electives

Year I: Semester I		
Course Code	Course	CU
BCH1101	Physical Biochemistry	2
BCH1102	Biomolecules: Structure and Function	4
BCH1201	Tissue Structure and Function	2
BCH1202	Metabolism and Metabolic Regulation	5
BCH2101	Principles and Applications of Biochemical Methods	4
BCH2102	Cell Biology	3
BCH2103	Endocrinology	3
BCH2201	Microbial Biochemistry	4
BCH2202	Advanced Enzymology	2
BCH2203	Molecular Biology	4
BCH2204	Industrial Training	5
BCH3101	Food Science and Nutrition	3
BCH3102	Advanced Immunology and Immunochemistry	3
BCH3103	Advanced Molecular Biology and Biotechnology	4
BCH3104	Animal Nutrition (Elective)	2
BOT3101	Plant Biochemistry (Elective)	3
BCH3201	Industrial Biochemistry	3
BCH3202	Research Project	5
BCH3203	Clinical Biochemistry and Disease Processes	3
BCH3204	Comparative Biochemistry (Elective)	2
BCH3205	Pharmacology and Toxicology (Elective)	2

A student taking Biochemistry as a major is required to do at least two electives in the third year in addition to the core courses.

The Minor Programme in Biochemistry

All courses in italics and bolded are electives.

Year I: Semester I		
Course Code	Course	CU
BCH1101	Physical Biochemistry	2
BCH1102	Biomolecules: Structure and Function	4
BCH1201	Tissue Structure and Function	2
BCH1202	Metabolism and Metabolic Regulation	5
BCH2102	Cell Biology	3
BCH2101	Principles and Applications of Biochemical Methods	4
BCH2103	Endocrinology	3
BCH2203	Molecular Biology	4
BCH2201	Microbial Biochemistry	4
BCH2202	Advanced Enzymology	2

BCH3101	Food Science and Nutrition	3
BCH3102	Advanced Immunology and Immunochemistry	3
BCH3103	Advanced Molecular Biology and Biotechnology	4
BCH3104	Animal Nutrition	2
BCH3203	Clinical Biochemistry and Disease Processes	3
BCH3204	Comparative Biochemistry	2

The student also has to pass all core courses and **at least four courses as electives** to complete the requirements for the minor.

The minimum total credit units for the minor programme in Biochemistry is 32

DEPARTMENT OF BOTANY

Introduction

Uganda has an economy with a strong agrarian bias whereby the main sources of income are; plants and plant products. The study of plants from different aspects has an important place in the educational set up of the country. The forest wealth of Uganda is very considerable and the Botanist plays an important role in its study and conservation.

The Department of Botany offers undergraduate and postgraduate courses in Botany leading to the award of Bachelor of Science., Master of Science and Doctor of Philosophy degrees. The department also has an experimental garden with a green house. The Botanical garden has a large range of living plants which are indispensable in teaching.

BOTANY COURSES

(taken with other Science subjects)

Major Programme

Year I: Semester I		
Course Code	Course	CU
BOT 1101	Flowering plant growth and development	2
BOT 1102	Plant form, structure & classification of lower and higher plants	3

BOT 1103	Introductory Microbiology	2
	Sub Total	7
Semester II		
BOT 1201	Elementary Genetics	2
BOT 1202	Basic Ecology	3
BOT 1203	Introduction to plant function	2
	Sub Total	7
NB. New change is the combination of former courses BOT 102 (2 CU) and BOT 103 (2 CU) into one course BOT 1102 – (3 CU).		
Year II: Semester I		
BOT 2101	Plant taxonomy, diversity and Evolution (Dicots)	3
BOT 2102	Plant taxonomy, diversity and evolution (Monocots)	3
BOT 2103	Plant taxonomy, diversity and evolution (Algae)	
BOT 2104	Taxonomy and Diversity of Fungi	3
	Sub Total	12
Semester II		
BOT 2201	Basic Bacteriology and Virology	3
BOT 2202	Plant Physiology	3
BOT 2203	Biostatistics	3
BOT 2204	Introductory Crop Improvement and Plant Genetic Resources	3
	Sub Total	12
Recess Term		
BOT 2205	Field Attachment	5

Introduction of a new course unit BOT 2204 in Semester Two Botany students doing Biochemistry should do Molecular Biology course unit as core. Introduction of BOT 2205 – Field Attachment for students		
Year III: Semester I		
BOT 3101	Plant Biochemistry	3
BOT 3102	Environmental Science & Energy Relations of Plants	4
BOT 3103	Crop Weed Biology	3
	Sub Total	14
Semester II (Core Course)		
BOT 3250	Crop Improvement and Evolution Plants	3
Elective Courses (at least two)		
BOT 3202	Genetics	4
BOT 3203	Microbiology and Plant Pathology	4
BOT 3204	Wildlife and Natural Resources Ecology	4
BOT 3205	Advanced Plant Taxonomy	4
BOT 3206	Plant Physiology	4
	Sub Total	15

The Programme in Botany

A student taking Botany as MINOR will be required to do the courses listed below as CORE courses for the minor.

Minor Courses For Botany

Year I: Semester I (Core Courses)		
Course Code	Course	CU
BOT 1101	Flowering plant growth and development	2
BOT 1102	Plant form, structure & classification of lower and higher plants	3
BOT 1103	Introductory Microbiology	2
	Sub Total	7

Year I: Semester II (Core Courses)		
BOT 1201	Elementary Genetics	2
BOT 1102	Basic Ecology	3
BOT 1203	Introduction to plant functions	2
	Total CU	7
Year II: Semester I (Cores Courses)		
BOT2101	Plant Taxonomy, Diversity and Evolution (Dicots)	3
BOT 2102	Plant Taxonomy, Diversity and Evolution (Monocots)	3
	Total	6
Year II: Semester II (Core Courses)		
BOT 2202	Plant Physiology	3
BOT 2204	Biostatistics	3
	Total CU	
Year III: Semester I		
BOT 3102	Environmental Science & Energy Relations of Plant Communities	4
	Total	4
Year III: Semester II		
Electives (At least ONE elective)		
BOT 3202	Genetics	4
BOT 3203	Microbiology and Plant Pathology	4
BOT 3204	Wildlife and Natural Resources Ecology	4
BOT 3205	Advanced Plant Taxonomy	4
BOT 3206	Plant Physiology	4
	Overall Total CU	50

NB. In Semesters one and two in Year II and Year III Semester I, one is free to choose additional courses from the core courses in the major programme. In Year III Semester II one is free to choose at least one elective.

Minimum CU for Botany minor is 34.

The minimum total credit units for the major and minor programmes in Botany are as stipulated by the Faculty of Science Regulations Part I, Article 3.2.