

MASTER OF SCIENCE IN CHEMISTRY

A. COMPULSORY COURSES		CU
CH 400	Research methodology	
CH 401	Instrumentation	
CH 402	Key Aspect of Uganda's Environment	
CH 403	Atmospheric Chemistry	

B. OPTIONAL COURSES		
CH 410	Advanced Chemistry of P-block Element	
CH 411	Chemistry of Metal Clusters	
CH 412	Coordination Compounds & Redox Reactions	

MASTER OF SCIENCE (GEOLOGY)

Year I: Semester I		CU
GLO 7101	Acquisition, Processing and Analysis of Data in Geosciences	3
GLO 7102	Introduction to Computing and Elementary Statistics	2
GLO 7103	Regional Geology and Mineral Resources of Sub-saharan Africa	2
GLO 7105	Principles of Environmental Geology	2
GLO 7104	Photogeology and Remote Sensing	3
GLO 7106	Applied Mineralogy and Petrology	3
Semester II		
GLO 7201	Isotope Geology and Geochronology	2
GLO 7203	Applied Stratigraphy	2
GLO 7204	Hydrogeology	3
GLO 7202	Advanced Structural Geology and Geotectonics	3
GLO 7210	Economic Mineral Deposits and Management of Resources	3
GLO 7211	Research Methods	2

GLO 7205	Applied Geophysics	2
GLO 7206	Advanced Geochemistry	3
GLO 7207	Ore Microscopy	2
GLO 7208	Analysis of Sedimentary Basins	2
GLO 7209	Applied Geomorphology	2
COURSES SWAPPING SEMESTER		
Year I: Semester I		
GLO 7107	Soil Mechanics and Foundation Engineering	2
Semester II		
GLO	Soil Mechanics and Foundation Engineering	2
COURSE CHANGING NAME		
Year I: Semester I		
GLO 7101	Instrumentation and Data Analysis (See footnote)	3
Footnote: The old name was Acquisition, Processing and analysis of Data in Geosciences		

MASTER OF SCIENCE IN CLINICAL BIOCHEMISTRY

(By Course-work and Dissertation)

Introduction

Aim

To contribute towards training of highly skilled professional human power in clinical biochemistry for national development.

Employment Prospects

The graduates of this programme would be absorbed in such fields as medical service

laboratories, University teaching and research in clinical aspects; and pharmaceutical industries.

Objectives

The course will provide specialized graduate training and practical experience in aspects of clinical biochemistry:

- (i) To provide an understanding of the biochemical and physical principles involved in health and disease.

- (ii) To achieve a high level of technical competence for development and maintenance of analytical services relevant to clinical needs.
- (iii) To enable the student develop skills in utilizing appropriate tests and the interpretation of results as well as the management of clinical data.
- (iv) To impart the skills of problem-solving and collaborative research.

Programme Content

The course is composed of three elements: a theoretical part, a practical part, and a research project.

Theoretical Section

Introduction to the course

Analysis of trace elements and vitamins

Analysis of nitrogen metabolites;

Endocrinology

General

Hypothalamus:

Adrenal Cortex:

Adrenal medulla

Tyroid

Gonads

Endocrine effects of cancer

Water and electrolytes

Physiology of normal respiration and respiratory diseases

Renal function

Calcium and bone disease. Magnesium

The Liver

Gastrointestinal tract

Clinical chemistry of blood and immune system. Clinical chemistry of pregnancy.

Clinical Chemistry of nervous system.

Practical Section

Introduction

- (a) Collection of specimens, handling and preservation of samples.

- (b) Preparation and storage of biological and biochemical preparations.

Principles and interpretation of the following biochemical techniques.

1. Spectrophotometry
2. Centrifugation
3. Chromatography
4. Electrophoresis
5. Bio-assays
6. Automation
7. Radio Isotopes
8. Clinical enzymology
9. Electrometry
10. Recombinant DNA
11. Immunochemistry
12. NMR Spectroscopy

Experiments will be set to emphasize various aspects of the above techniques.

Methods of standardization, calibration, SI Units, quality control.

Rotation and Internships

Each student will work for short periods (2 weeks) in the service Laboratories at Mulago Hospital and for two longer periods of 6 (six) weeks each in Hospital Clinical Chemistry Laboratories.

Research Project

Each candidate shall be required to undertake a Clinical Chemistry research project to be supervised by appointed supervisor(s).

The topics for such research projects shall be selected from priority areas identified by the department.

Course Structure

Course Organization and Duration

Year I

47 weeks course made up of 35 weeks of lectures and practical training and 12 weeks of rotations.

Year II

47 weeks made up of 12 weeks of internship followed by research project.

MASTER OF SCIENCE IN BOTANY

(By Course Work And Dissertation)

Programme Structure

Curriculum

- (i) The programme shall extend over two

academic years each divided into two semesters each of 20 weeks. Each course will be divided into course units. A Course Unit is defined as one contact hour per week, per semester. One hour