

### **13.7.3 BACHELOR OF EDUCATION (SCIENCE)**

#### **Entry requirements**

Are similar to those of Bachelor of Science

#### **Examinations**

University regulations on examinations shall apply

#### **Certification**

Graduates of this programme will be awarded a Bachelor of Education (Science) from the School of Education.

#### **Programme structure**

In each year of study, students are required to take courses in the School of Education in addition to a programme of courses in the School of Pure and Applied Sciences. Students taking Plant Sciences and Zoological Sciences will be required to take three units from each of the two Departments in each year. In addition to these, they must take two units in each academic year in a second teaching subject (Geography, Chemistry or Mathematics) and four University Common Units. With the exception of SBT 400 all PS courses carry one unit.

#### **Unit Codes and Titles**

##### **University Common Units**

###### **Core**

UCU 100: Communication Skills

UCU 103: Introduction to Critical and Creative Thinking

Elective (Choose One)

UCU 101: Development Studies

UCU 104: Introduction to Entrepreneurship

UCU 106: Diversity, Ethics and Citizenship

###### **Level 100**

SBT 100: Cellular Basis of Life

SBT 101: Survey of the Plant Kingdom

SBT 102: Plant Morphology and Anatomy

###### **Level 200**

SBT 200: Plant Ecology

SBT 201: Plant Function

SMB 200: General Microbiology

###### **Level 300**

###### **Core courses**

SBT 300: Cell Biology and Genetics

SBT 301: Taxonomy of Higher Plants

Elective courses (Choose any one unit)

SBT 302: Mycology

SBT 303: Principles of Plant Pathology

SBT 304: Biosystematics and Palynology

SMB 300: Bacteriology

SBT 306: Economic Botany

SBT 307: Biostatistics (Compulsory for students majoring in Botany in their final year)

SBT 308: Plant Growth and Development

SBT 309: Advanced Plant Ecology

SBT 310: Plant Biochemistry and Physiology.

### Level 400 (Choose any three units)

All fourth year units are Elective

#### Level 400:

SBT 400: Research Project (2 units over 2 semesters)

SBT 401: General Genetics

SBT 402: Phycology

SBT 403: Ecophysiology

SBT 405: Morphogenesis and Developmental Anatomy

SBT 407: Arid Land Ecology

SBT 408: Forest Ecology

SBT 410: Marine Botany

SBT 411: Aquatic Botany

SMB 402: Environmental Microbiology

SBT 419: Cytogenetics and Molecular Biology

SBT 420: Biotechnology

SBT 421: Plant Breeding

SBT 422: Virology

SBT 424: Pesticides

### Second Teaching Subject

Students taking plant sciences and zoological sciences will take 2 units in the 1st, 2nd, 3rd and 4th years of their study in a second teaching subject which can be either Chemistry or Geography or Mathematics. The units to be taken in each of the second teaching subjects are as follows:

#### Geography

Level 100

AGE 100: Introduction to Statistics Cartography and Map Analysis

AGE 102: Physical Geography

#### Level 200

AGE 200: Statistics and Cartography

AGE 203: Geography of East Africa

#### Level 300

AGE 300: Air Photo Interpretation and Field course

AGE 303: Geography of Development.

**Level 400 (Choose any two units)**

AGE 400: Remote Sensing and Resource Management

AGE 401: Environmental Conservation

AGE 402: Surveying.

**Mathematics**

Level 100

SMA 102: Basic Mathematics

SMA 104: Calculus I

**Level 200**

SMA 200: Calculus II

SMA 202: Linear Algebra I

Level 300

SMA 335: Ordinary Differential Equation I

SMA 336: Ordinary Differential Equation II

**Level 400**

SMA 432: Partial Differential Equation I

SMA 433: Partial Differential Equation II

**Chemistry****Level 100**

SCH 100: Fundamentals of Inorganic Chemistry

SCH 101: Introduction to Physical Chemistry

SCH 102: Organic Chemistry\*\*

**Level 200**

SCH 200: Atomic Structure and Chemistry Bonding (Prerequisite SCH100)

SCH 201: Chemical Thermodynamics.

**Level 300**

SCH 300: Chemistry of S and P Block Elements

SCH 301: Coordination and Organic Metallic Chemistry (Prerequisite SCH101).

**Level 400**

SCH 401: Electrochemistry (prerequisite SCH 101)

SCH 400: Comparative Study of Transition Elements (Prerequisite SCH 301)

\*\* Recommended to be taken in the place of SCH 301

**Rationalized Units****Unit code and Title****Level 200**

KCU 202: Basic Soil Science

**Level 300**

SMR 305: Wildlife Ecology and Management

AGE 317: Geographic Information Systems

ENS 349: Rangeland Resource Management

**Level 400**

ASC 404: Environmental Sociology

ENS 446: Agroforestry

ENS 453: Environmental Policy and Law

**Postgraduate Programmes**

### **Entry Requirements**

- i. A student wishing to pursue a master of science degree in the Department of Plant Sciences must satisfy the minimum Kenyatta University and School of Pure and Applied Sciences entry requirements.
- ii. A student to be admitted must satisfy ANY of the following minimum requirements: Bachelor of Science or Bachelor of Education (Science) with at least Second Class Honours (Upper Division) or equivalent with Biology as the main subject from a recognized university.
- iii. Those with Second Class (Lower Division) may be considered on condition that they have Grade "C" and above in units relevant to their areas of specialization.

### **Examination**

University regulations on examinations shall apply.

### **Certification**

Graduates of the programmes will be awarded the degree of Master of Science in the relevant areas of specialization described below.

### **Programme Structure**

The programme shall extend over a period of eighteen months from date of registration and shall consist of coursework examination and thesis. During the first year of study a student shall take a minimum of eight units and a maximum of ten units.

### **Core Units (Common for all M.Sc. Programmes) SBT**

800: Data Management and Communication SCU 801:

Scientific Data Analysis

SBT 802: Advanced Botanical Techniques

SCU 800: Research Methods for Pure and Applied Sciences

SBT 810: Thesis