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