

13.8.3 BACHELOR OF SCIENCE (BIOLOGY)

Entry Requirements

A student wishing to pursue a B.Sc degree in Biology must satisfy the minimum University entry requirements and School of Pure and Applied Sciences regulations. A student must also have passed Biology or Biological Sciences in the K.S. C. E. at the minimum grade of B-.

In addition the student must satisfy any of the following minimum requirements:-

- i. Either: Must have passed any two subjects from the following alternatives at the grades shown:

Alternative A: Chemistry C+, Physics C, Mathematics C, Geography B-, English C+.

Alternative B: Physical Science B-, Mathematics C, Geography B-, English C+, Agriculture B-.

- ii. Or: Have a minimum of 2 principle passes, one of which must be Biology in the Kenya Advanced Certificate of Education (KACE) or equivalent,
- iii. Or: Have a minimum of C plain at KCSE and a Diploma in Forestry, Education

(Biology, Agriculture), Applied Biology, Wildlife or Wetlands and with at least a credit pass from an institution recognized by the University Senate,

- iv. Or: Mean grade of C- (minus) at KCSE and progressed from certificate to Diploma at Kenyatta University or any other recognized/accredited Institutions.
- v. Or: Have any other qualification accepted by the University Senate.

Examination

The general university regulations and guidelines on retakes, special exams, semester off and discontinuation shall apply.

Grading

Examination shall include main exam constituting 70% and continuous assessment tests constituting 30%. Each course shall be graded out of 100 marks and the pass mark shall be 40. The marks shall be translated into letter grades as per University regulations.

Course Structure

The units offered under this program are listed at the end. Each unit shall comprise the equivalent of 35 contact hours. The B.Sc. (Biology) course will compose of a minimum 47 units and 3 university common units.

Certification: Graduates of this program will be awarded a Bachelor of Science Degree in Biology (BSc Biology)

Unit Code and Title

Level 100

UCU 100: Communication Skills
UCU 103: Introduction to Critical and Creative Thinking
UCU 104: Entrepreneurship
SZL 100: General Zoology
SZL 101: Introduction to Ecology and Bio-analysis
SBT 100: Cellular Basis of Life
SBT 101: Survey of Plant Kingdom
SCH 100: Fundamentals of Inorganic Chemistry
SCH 101: Introduction to Physical Chemistry
SZL 103: Introduction to Histology
SZL 106: Laboratory Methods in Biology
SBT 102: Plant morphology and Anatomy
SMA 101: Mathematics for Science II
SMA 100: Mathematics for Science I
SCH 102: Organic Chemistry

Level 200 - All Cores

SZL 200: Vertebrate Zoology
SZL 201: Invertebrate Zoology
SBT 201: Plant Function
SBT 204: Pteridophytes and Bryophytes
SZL 202: Comparative Physiology
SZL 208: Computer Applications n Biology

SZL 203: Developmental Biology
 SBT 200: Plant Ecology
 SMB 200: General Microbiology
 SZL 205: Principles of Biochemistry
 SZL 207: Essentials of Cell Biology
 SBT 205: Phytopathogens

Level 300

SZL 300: Biostatistics (Core)
 SBT 300: Cell Biology and Genetics (Core) SBT
 301: Taxonomy of Higher Plants (Core) SZL
 307: Fundamentals of Immunology (Core) SZL
 304: Evolutionary Biology (Core)
 SZL 306: Human Biology (Core)
 SZL 312: Limnology
 SBT 310: Plant Physiology and Biochemistry (Core)
 SBT 309: Advanced Plant Ecology (Core)
 SZL 315: Introduction to Parasitology (Elective)
 SBT 305: Principles of Plant Pathology (Elective)
 SZL 308: Arthropod Biology (Elective)
 SZL 303: Essential of Molecular Biology
 SZL 316: Medical Microbiology (Elective)

Level 400

Core

SZL 400: Research Project (2 units)

Electives

SZL 401: Fisheries Resource Management
 SZL 402: Marine Ecology
 SZL 403: General Entomology
 SZL 404: Integrated Pest & Vector Management
 SZL 405: Medical Protozoology
 SZL 406: Medical Helminthology
 SZL 407: Advanced Immunology
 SZL 408: Applied Immunology
 SZL 409: Environmental Physiology
 SZL 410: Neuroendocrinology
 SZL 415: Ecology for Sustainable Development
 SZL411: Theoretical Ecology

Areas of Specialization

Ecology

SZL 411: Theoretical Ecology
 SZL 412: Applied Ecology
 SZL 413: Population Genetics
 SZL 414: Tropical Biodiversity
 SZL 415: Ecology for Sustainable Development

SBT 402: Phycology
SBT 407: Arid Land Ecology
SBT 408: Forest Ecology
SBT 409: Rangeland Ecology
SZL 402: Marine Ecology
SBT 410: Marine Botany
SBT 411: Aquatic Botany
SZL 412: Applied Ecology

Aquatic Biology and Fisheries

SZL 401: Fisheries Resource management
SZL 402: Marine Ecology
SZL 411; Theoretical Ecology
SZL 412: Applied Ecology
SZL 413: Population Genetics
SBT 406: Evolution
SBT 402: Phycology
SBT 410: Marine Botany
SBT 411: Aquatic Botany

Biomedical and Molecular Biology

SZL 405: Medical Protozoology
SZL 406: Medical Helminthology
SZL 407: Advanced Immunology
SZL 408: Applied Immunology
SBT 419: Cytology and Molecular Biology
SBT 401: General Genetics
SBT 417: Advanced Genetics
SBT 418: Microbial Genetics
SBT 420: Biotechnology

Entomology and Pest Control

SZL 403: General Entomology
SZL 404: Integrated Pest Management
SZL 411: Theoretical Ecology
SZL 413: Population Genetics
SBT 401: General Genetics
SBT 404: Phytochemistry
SBT 412: Applied Microbiology
SBT 418; Microbial Genetics
SBT 423: Diagnosis and control of plant diseases

Physiology and Anatomy

SZL 409: Environmental Physiology
SZL 410: Neuroendocrinology
SZL 416: Physiology of Wild Mammals
SBT 403: Ecophysiology
SBT 405: Morphogenesis and Developmental Anatomy
SBT 415: Fermentation
SBT 416: Secondary Metabolism

SBT 417: Advanced Genetics

SBT 420: Biotechnology

Genetics

SBT 401: General Genetics SBT 417: Advanced Genetics SBT 420: Biotechnology

SZL 413: Population Genetics SZL 408: Applied Immunology SBT 418: Microbial Genetics

SBT 419: Cytology and Molecular Biology

SBT 421: Plant Breeding

SBT 425: Cell and Tissue Culture

Microbiology

SBT 418: Microbial Genetics

SBT 422: Virology

SBT 412: Applied Microbiology

SBT 413: Environmental Microbiology

SBT 414: Medical Microbiology SZL 405: Medical Protozoology SZL 406: Medical Helminthology

SZL 407: Advanced Immunology SZL 408: Applied Immunology