



### ADMISSION REQUIREMENTS



- Kenya Certificate of Secondary Education (KCSE) or its equivalent with a minimum aggregate of C+ and attained the following minimum grades in the specified subjects: Biology C+; Mathematics B-; and English B-; or
- Kenya Advanced Certificate of Education (KACE) Certificate with two principal passes in Biology and Mathematics and a subsidiary; or
- Be a holder of a KNEC Diploma or its equivalent in Epidemiology and Biostatistics
- Five (5) upper level passes at IGCSE/IB
- Five (5) credits in any 5 subjects at 'O' Level, and/or 'A' Level passes of 'C' at GCE

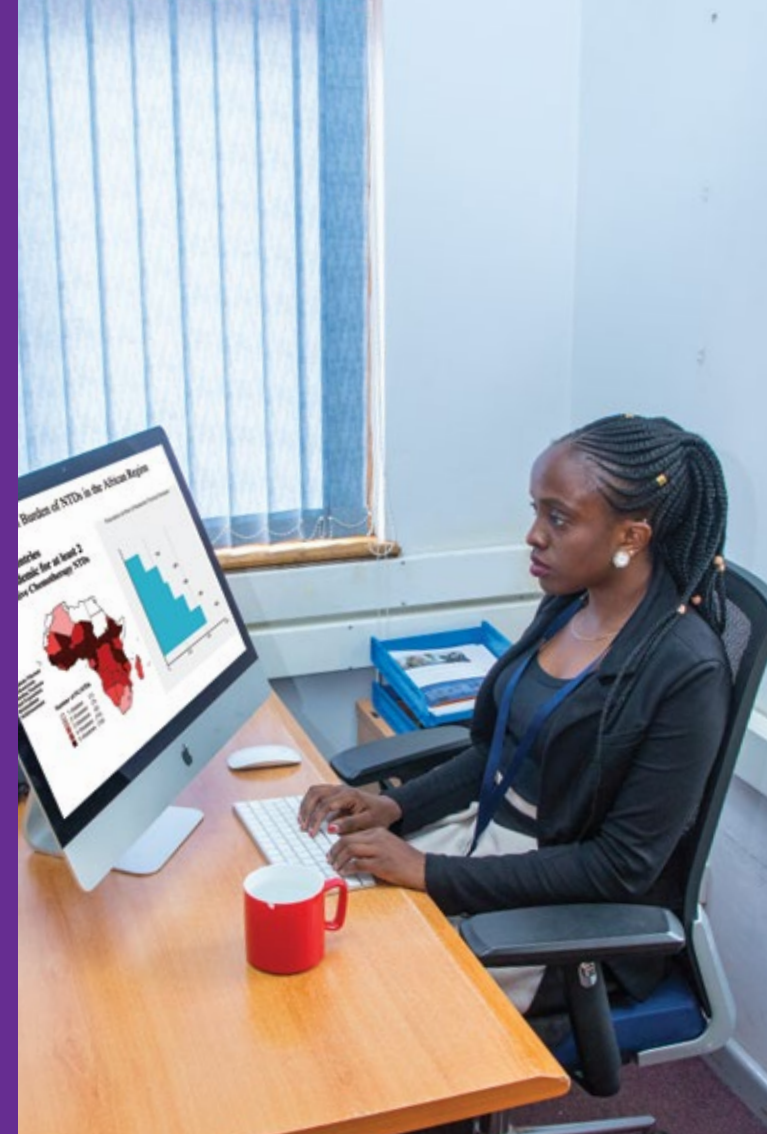
### CAREER OPTIONS

- Biostatisticians/Statistical Analysts
- Epidemiologists
- Researchers
- Lecturers
- Health Data Managers
- Monitoring and Evaluation Officers
- Independent Consultants
- Big Data Managers
- Clinical Trial Experts
- Clinical Trial Studies Specialists



### CONTACTS

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## B.Sc. Epidemiology & Biostatistics

Accredited in Kenya & the United States of America by the Commission for University Education (CUE) and WASC Senior College and University Commission respectively.

[www.usiu.ac.ke](http://www.usiu.ac.ke)

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## PROGRAM DESCRIPTION

The USIU-Africa Bachelor of Epidemiology and Biostatistics program is based on two basic and seamlessly integrated sciences of public health. The program promotes the development, application and teaching of descriptive and analytic approaches used to understand the increasingly complex causes, distribution and determinants of major local, national, regional and global public health problems.

At the same time, the program develops, applies and teaches theories and methods in the design of biological, biomedical and health-related studies and in collection, analysis and interpretation of data to inform and support the descriptive and analytic approaches that can be used to prevent and control diseases as well as promote public health.

## PROGRAM LEARNING OUTCOMES

Upon successful completion of the program, the students will be able to:

1. Use epidemiologic knowledge to respond to a variety of practical situations that impact on public health
2. Employ biostatistical methods to conduct basic life science research
3. Analyze the appropriateness of existing laws and ethics in assuring population public health
4. Interpret research results of statistical analyses in public health
5. Use relevant statistical software to organize, analyze, and report on life science research data
6. Develop a plan for data management and analysis using appropriate statistical techniques
7. Design Clinical trials and analyse disease prediction data
8. Apply mathematical modelling for disease outcomes

## DEGREE REQUIREMENTS

194 UNITS

### GENERAL EDUCATION 39 UNITS

#### SIGNATURE COURSES 12 UNITS

**STRATEGIES FOR UNIVERSITY SUCCESS 3 UNITS**  
SUS 1010 Strategies for University Success

**RESEARCH METHODS 3 UNITS**  
GRM 2000 Introduction to Research Methods

**COMMUNITY SERVICE OR COMMUNITY PROJECT 3 UNITS**  
CMS 3700 Community Service

**THE SENIOR EXPERIENCE 3 UNITS**  
SEN 4800 Integrated Senior Seminar

#### LANGUAGE STUDIES 12 UNITS

**ENGLISH 6 UNITS**  
ENG 1106 Composition I  
ENG 2206 Composition II

**FOREIGN LANGUAGE 6 UNITS**  
*Students must have credit for a foreign language or must take up a two-course foreign language sequence of one language. USIU-Africa offers courses in Arabic, Chinese, French, Japanese, Spanish, and Swahili.*  
Foreign Language I  
Foreign Language II

#### DISCIPLINARY GENERAL EDUCATION ELECTIVES 15 UNITS

MTH 1109 College Algebra 3 Units  
IST 1010 Introduction to Information Systems 3 Units

#### SCHOOL-BASED GENERAL EDUCATION ELECTIVES 9 UNITS

*Students are required to pick 3 electives from the other schools (At least one of the courses should be an upper level course).*

#### SCHOOL OF HUMANITIES AND SOCIAL SCIENCES - LOWER LEVEL ELECTIVES

SOC 2201 Introduction to Sociology

#### CHANDARIA SCHOOL OF BUSINESS – LOWER LEVEL ELECTIVES

BUS 1010 Introduction to Business Organizations

#### CHANDARIA SCHOOL OF BUSINESS – UPPER LEVEL ELECTIVES

MGT 3010 Overview of Management Practice

### MAJOR 155 UNITS

#### SELECTED SCHOOL COURSES 48.5 UNITS

##### LOWER DIVISION COURSES 16.5 UNITS

HSC 1330 Calculus for Health Sciences  
HSC 1394 Introduction to Global Health  
NSC 2205 Human Physiology  
MIC 2360 Introduction to Microbiology & Parasitology  
HSC 2391 Principles of Health Economics

##### UPPER DIVISION COURSES 32 UNITS

BUS 4090 Strategic Management  
ENT 4005 Entrepreneurial Behavior and Ethics  
HSC 3395 Environmental & Occupational Health  
HSC 3492 Law & Bioethics in Research  
HSC 4010 Sociology for Health Sciences  
HSC 4494 Practicum & Attachment  
HSC 4495 Project Planning & Proposal Development  
HSC 4496 Research Methods in Health Sciences  
PHM 4510 Fundamentals of Pharmacometrics

#### PUBLIC HEALTH & EPIDEMIOLOGY COURSES 40.5 UNITS

##### LOWER DIVISION COURSES 15 UNITS

EPI 1000 Introduction to Epidemiology  
EPI 1010 Epidemiology of Diseases  
EPI 2010 Nutritional Epidemiology  
PHT 2010 Disease Prevention & Health Promotion  
PHT 2020 Control & Prevention of Infectious Diseases

##### UPPER DIVISION COURSES 25.5 UNITS

EPI 3010 Advanced Epidemiology  
EPI 4010 Exposure Assessment in Epidemiology  
EPI 4020 Genetic & Molecular Epidemiology  
EPI 4030 Pharmacoepidemiology and Drug Safety  
HSC 4396 Fundamentals of Global Health  
PHT 3010 Contemporary Community Health Issues  
PHT 4010 Public Health Epidemiology  
PHT 4020 Monitoring & Evaluation of Health Programs

#### BIOSTATISTICS AND DATA ANALYSIS 66 UNITS

##### LOWER DIVISION COURSES 15 UNITS

BST 1010 Introduction to Biostatistics  
BST 1020 Introduction to Statistical Computing  
BST 2010 Probability & Statistical Inference  
IST 2230 Introduction to Computer Fundamentals & Programming

##### UPPER DIVISION COURSES 51 UNITS

DAN 3010 Multivariate Methods/ Analysis  
DAN 3020 Data Mining  
BST 3010 Regression Modelling  
BST 3020 Demographic Techniques  
DAN 4010 Design & Management of Clinical Trials  
DAN 4015 Longitudinal Data Analysis  
BST 4010 Research Project  
BST 4030 Spatial Statistics and Disease Mapping  
BST 4050 Biostatistical Consultancy  
DAN 4020 Survival Data Analysis  
DAN 4030 Time Series Analysis  
BST 4020 Mathematical Modelling of Infectious diseases  
BST 4040 Statistical Genetics  
BST 4060 Principles of Bioinformatics

