BSc (Hons) Biological Sciences Code: SC 306

1. Rationale and Objectives:

The Department of Biosciences is offering a new programme of studies in Biological Sciences that adapts to the current demands of society and responds to challenges faced by our students in developing skills in the fast moving biological and frontier sciences. The students will be trained in order to enhance their employability in research, healthcare, environmental conservation and education. Biological science is one of the broadest and most important subjects in the world today. After all, Biology is the study of Life. It encompasses everything from the study of the origins of Life right up to the study of the Biosphere.

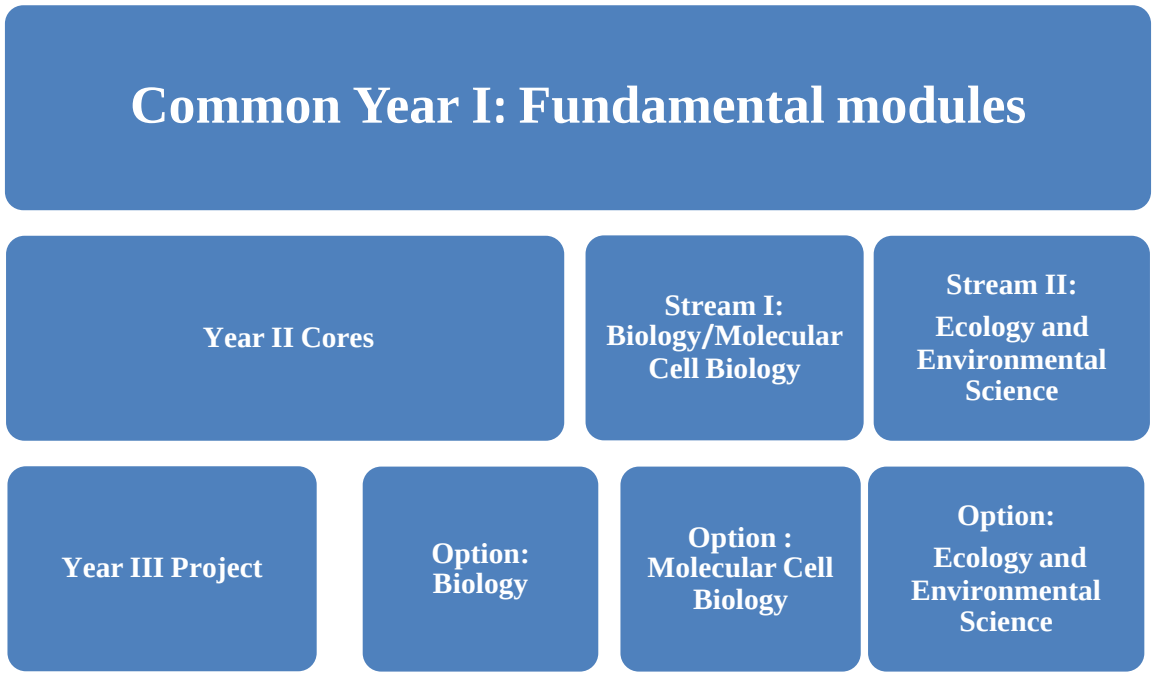
This new programme matches the demands of modern biological research by offering an interdisciplinary approach that addresses the most important problems within the different fields of biology. The department's diverse range of interests and expertise provides a challenging intellectual environment that inspires students to study fundamental questions in biology with enthusiasm.

The structure of the programme is semester based. Year I students will learn fundamental and core modules to acquire a broad supportive foundation in biosciences by studying modules such as cell theory and molecular biology, gene theory, diversity and evolution, physiology and adaptations, homeostasis and ecology. In Year II, students will consolidate this foundation and will progress and branch off into two main specialization streams: "Biology/Molecular Cell Biology" and "Ecology and Environmental Science". In Year III, these streams further branch off into three more focused specializations: "Biology", "Molecular Cell Biology" or "Ecology and Environmental Science", thus offering students the opportunity to choose one dedicated area of specialization. Additionally, they will undertake a research project worth 10 credits spread over the two semesters. The total number of credits (97) over the three years of study are harmoniously distributed as follows: (30-39-28) with the module weighting increasing progressively from 1, 3 and 5 in Years I, II and III respectively.

The course will adapt new and innovative strategies in teaching and learning by integrating the use of virtual learning progressively, allowing access to module-related material such as supporting notes, self-assessment tests, molecular models, and animations. It also provides an opportunity to acquire a thorough foundation in theory and practice of Biological and Environmental Sciences with a view to developing both critical ability and practical skills. This degree also has the objective of preparing students for higher studies and research at postgraduate level.

Graduates with competencies in these three specializations can seek employment as Education, Scientific, Environmental, Health/Biotechnology, Food and Agricultural Officers in the public and private sectors. Attention will also be paid towards the personal development of students in acquiring professional competence and a sense of community responsibility.

2. Programme Structure



YEAR	Core Modules	Elective Modules	Project	Total credits
Year I	10			30
Year II	9	4		39
Year III		6	1 (10 credits)	28
Total	**19 Core Modules**	**10 Elective Modules**	**1 Project**	**97 Credits**

3. General Entry Requirements

As per General Entry Requirements for admission to the University for undergraduate degrees.

4. Programme Requirements

Credit at GCE ‘O” level in five subjects including Mathematics, Chemistry and Biology, and pass at GCE 'A' Level in at least three (3) Science subjects, including Biology.

5. Programme Duration

	Normal	Maximum
Degree	3 years (6 semesters)	5 years (10 semesters)

6. Credit System

15 Hours Lectures and/or Tutorials - 1 credit

15 Hours of Practical Work – 0.5 credit

7. Credits per Year

Minimum: 18 credits

Maximum (including Retake Modules): 48 credits

8. Programmes of Studies abiding by semester regulations:

Minimum credits per semester - 3 credits

Maximum credits per semester (including Retake Modules) - 24

9. Minimum Credits Required for Awards

BSc (Hons): Minimum Credits Required for Award of Undergraduate Degree: 97

BSc (Hons) Biological Sciences (Option Biology) should include a minimum of 12 credits to be obtained from elective modules in Stream I: "Biology/Molecular Cell Biology" in Year II; 18 credits to be obtained from elective modules in Option "Biology" in Year III and a project carrying 10 credits in Year III.

BSc (Hons) Biological Sciences (Option Molecular Cell Biology) should include a minimum of 12 credits to be obtained from elective modules in Stream I: "Biology/Molecular Cell Biology" in Year II; 18 credits to be obtained from elective modules in Option "Molecular Cell Biology" in Year III and a project carrying 10 credits in Year III.

BSc (Hons) Biological Sciences (Option Ecology and Environmental Science) should include a minimum of 12 credits to be obtained from elective modules in Stream II: "Ecology and Environmental Science" in Year II; 18 credits to be obtained from elective modules in Option "Ecology and Environmental Science" in Year III and a project carrying 10 credits in Year III.

10. Classification of Awards

The award classification will be based on the CPA (x) at the end of the Programme of Studies as follows:

CPA (%)	Classification
X ≥70	1st Class
60 ≤ x < 70	2nd Class 1st Division with Honours
50 ≤ x < 60	2nd Class 2nd Division with Honours
45 ≤ x < 50	3rd Class with Honours
40 ≤ x <45	Pass
x< 40	No Award

11. Exit Points

The exit points for Certificate and Diploma in Biological Sciences will be as per general University Regulations 6.7.6.

12. Assessment

Each module will carry 100 marks (i.e. expressed as %) and will be assessed as follows:

Assessment for each module will be based on a written examination and continuous assessment unless otherwise specified. Written examinations for all semester modules, whether taught in semester 1 or in semester 2, will be carried out at the end of the semester in which they are taught (unless otherwise stated).

Continuous assessment may be based on laboratory work, and/or assignments and should include at least 1 class test. All students should keep a portfolio of all coursework for their respective programme of studies. The modules BIO 1104(1)-Skills for Biosciences and WCS 2200(3)-Writing Case Studies will be assessed solely by continuous assessment.

Projects carry 10 credits for the BSc (Hons) degree and will be spread over the two semesters of Year III. Projects will include topics of national concern.

An overall total of 40% for combined Continuous Assessment (CA) and Written Examination (WE) components is required to pass a module without minimum thresholds within the individual continuous assessment and written examination. Weighting for a particular module is indicated within parentheses in the module code.

List of modules

A. CORE MODULES

CODE	MODULE NAME	Hrs/ Yr L+P/Visits	Credits
YEAR I			
SEMESTER 1			
BIO 1101(1)	Biochemistry	33+24	3
BIO 1102(1)	Diversity of Plants I	33+24	3
BIO 1103(1)	Diversity of Animals I	33+24	3
BIO 1104(1)	Skills for Biosciences	33+24	3
BIO 1105(1)	Molecular Biology I	33+24	3
SEMESTER 2			
BIO 1201(1)	Cell Biology	33+24	3
BIO 1202(1)	Plant Physiology I	33+24	3
BIO 1203(1)	Animal Physiology I	33+24	3
BIO 1204(1)	Microbiology	33+24	3
BIO 1205(1)	Ecological Processes and Global Change	33+24	3
YEAR II			
SEMESTER 1			
BIO 2101(3)	Diversity of Plants II	33+24	3
BIO 2102(3)	Diversity of Animals II	33+24	3
BIO 2103(3)	Genetics	33+24	3
BIO 2104(3)	Biostatistics	33+24	3
SEMESTER 2			
BIO 2201(3)	Plant Physiology II	33+24	3
BIO 2202(3)	Animal Physiology II	33+24	3
BIO 2203(3)	Molecular Biology II	33+24	3
BIO 2205(3)	Ecology of Species Interaction	33+24	3
WCS 2200(3)	Writing Case Studies	9+0*	3

*: 9 hours of Lectures and 36 hours of self-study

B. ELECTIVES - TWO SPECIALTY STREAMS IN YEAR II

Biology/Molecular Cell Biology Stream**

		HRS/ Yr. L+ P/Visits	CREDITS
YEAR II			
SEMESTER 1			
BIO 2105(3)	Advanced Microbiology	33+24	3
BIO 2106(3)	Cell and Molecular Nutrition	33+24	3
BIO 2107(3)	Biotechnology	33+24	3
SEMESTER 2			
BIO 2204(3)	Mathematical Modeling in Biology	45+0	3
BIO 2206(3)	Immunology and Parasitology	33+24	3
BIO 2207(3)	Bioinformatics	33+24	3
BIO 2208(3)	Animal Behaviour	33+24	3

Ecology and Environmental Science Stream**

YEAR II			
SEMESTER 1			
BIO 2108(3)	Ecology of Interactions	33+24	3
BIO 2109(3)	Coastal and Environmental Management	33+24	3
BIO 2110(3)	Fisheries Biology and Management	33+24	3
SEMESTER 2			
BIO 2204(3)	Mathematical Modeling in Biology	45+0	3
BIO 2209(3)	Ecology of Communities and Ecosystems	33+24	3
BIO 2210(3)	Environmental Monitoring	33+24	3
BIO 2211(3)	Tropical Marine Biology and Ecology	33+24	3

***Not all modules may be on offer*

C. THREE SPECIALTY OPTIONS IN YEAR III

		HRS/Yr. L+P/Visits	CREDITS
BIO3000(5)	Project / Dissertation (spread over two semesters and Obligatory in Year III)	NA	10

1. BIOLOGY OPTION**

YEAR III

SEMESTER 1

BIO 3101(5)	Nutrition in Health and Disease	33+24	3
BIO 3102(5)	Endocrinology	33+24	3
BIO 3103(5)	Plant growth and development	33+24	3
BIO 3104(5)	Food and Industrial Microbiology	33+24	3

SEMESTER 2

BIO 3201(5)	Plant Protection	33+24	3
BIO 3202(5)	Developmental Biology	33+24	3
BIO 3203(5)	Post -Harvest Technology	33+24	3
BIO 3204(5)	Food Security and Safety	33+24	3

2. ECOLOGY AND ENVIRONMENTAL SCIENCE OPTION**

YEAR III

SEMESTER 1

BIO 3105(5)	Ecotoxicology	33+24	3
BIO 3106(5)	Conservation Biology	33+24	3
BIO 3107(5)	Global Change Biology	33+24	3
BIO 3108(5)	Sustainable Development	33+24	3

SEMESTER 2

BIO 3205(5)	Toxicology, Nutrition and Food	33+24	3
BIO 3206(5)	Molecular Ecology and Evolution	33+24	3
BIO 3207(5)	Physiology and Reproduction of Marine Organisms	33+24	3
BIO 3208(5)	Environmental Hazards and Disasters	33+24	3

3. MOLECULAR CELL BIOLOGY OPTION**

YEAR III

SEMESTER 1

BIO 3109(5)	Molecular Plant Pathology	33+24	3
BIO 3110(5)	Molecular basis of Infections	33+24	3
BIO 3111(5)	Cell signaling and Protein sorting	33+24	3
BIO 3112(5)	Mechanisms of Gene Expression	33+24	3

SEMESTER 2

BIO 3209(5)	Forensic DNA Biology	33+24	3
BIO 3210(5)	Functional Genomics	33+24	3
BIO 3211(5)	Molecular Basis of Disease	33+24	3
BIO 3212(5)	Virology	33+24	3

*****Not all modules may be on offer.***

The project / dissertation is obligatory and is spread over the two semesters of Year III

** *Subject to availability of resources and a critical number of students enrolled in a particular Stream/Option, the Department reserves the right to offer or not to offer all modules in a stream in any academic year.*