



# **Departmental Handbook**

## **Biological Sciences**

(Microbiology Programme)

Faculty of Basic Medical and Applied Sciences  
(FBMAS)



TRINITY UNIVERSITY  
1 FFF Road, Off Alara Street, Sabo, Yaba  
Lagos State, Nigeria

# **Student's Handbook**

DEPARTMENT OF BIOLOGICAL SCIENCES  
(Microbiology Option)  
Faculty of Basic Medical and Applied Sciences (FBMAS)

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**Welcome Note  
From  
The Head of Department**

**Dear Biological Sciences Students.**

A very warm welcome to you as you begin the Bachelor of Degree programme at the Department of Biological Sciences. You should count it a great privilege to gain admission into Trinity University and especially into the Biological Sciences department where teaching is complemented with research.

The students in these programmes are trained to be self-dependent in handling challenges in their various discipline. Our course curricula are enriched with robust course outlines which are adequately and methodically packaged to prepare you for the successful practice of the profession anywhere in the world. In addition, the compulsory six months Industrial Training programme which you will embark on at the second semester of your third year at the University will further expose you to the practical and industrial application of this course of study. These include hospitals and health related organisations, research Institutions, fisheries and Agro- allied industries, Environmental management and pollution control Agencies, Agriculture and lots more. This exposure will make you to develop self confidence in the various field of specialties and this will also make you employable and develop initiative of establishing small scale enterprises of your own.

You are enjoined to read this document in its entirety as it pertains to your admission into the Microbiology programme. It describes the curriculum, academic and professional standards for the Microbiologist in training. You are responsible for being informed about the academic requirements, both general and specific for the completion of the degree programme in Microbiology. The University students' handbook will provide you with more information about the rules and regulations of the University. Trinity University has zero tolerance to examination Malpractices, you are advised not to get yourself involved in this. The penalties for the various examination misconducts are also contained in this handbook.

The department is at all times available for counsel, guidance and consultations at any point of need.

We wish you the best and a successful stay in Trinity University.

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Yours sincerely,

The Head of Department.

## **Introduction**

### **The Faculty of Basic Medical and Applied Sciences**

The Faculty houses six Departments and nine programmes; Biological Sciences (Microbiology, Biology and Biotechnology), Chemical Sciences (Industrial Chemistry), Computer and Information Sciences (Computer Science and Information Technology), Medical Laboratory Science, Nursing Sciences and Physics with Electronics. The programmes lead to award of Bachelor of Science (B.Sc.) except for Nursing Science and Medical Laboratory Science that awards B.NSc. and B.MLS degree respectively.

The Academic Handbook contains details of prescribed courses and other specific requirements for all programs offered in the Faculty at the undergraduate level. It is intended to provide precise information to students, parents and everyone interested in the academic programmes of the Faculty. The curricula of the programmes are carefully designed to equip our students with necessary skills to compete with colleagues in their field in the different parts of the world and also to emerge as leaders in their chosen disciplines and solution providers in areas of their future endeavours.

The Faculty is blessed with competent and committed lecturers, administrative and technical staff. The crop of these experienced lecturers and other faculty members in addition to a conducive environment, have always placed the faculty in an enviable position among the best. In addition, our laboratories are equipped with the state of art equipment for hands on practical experience in the various fields of study.

Welcome to the Faculty of Basic Medical and Applied Sciences where competent Scientists and leaders are raised.



## **Department of Biological Sciences**

### **Overview**

The department situated in the Faculty of Basic Medical and Applied Sciences offers a 4-year B.Sc. degree programme in Microbiology, Biology and Biotechnology. The department was created in 2019, the same year the University was licensed to commence academic work. In addition, the department is headed by a qualified life scientist with good academic and administrative experience, and supported by qualified academic, administrative and laboratory support staff who participate in the day-to-day administration of the Department.

### **Philosophy and Objectives**

#### **Our Vision**

To be at the frontiers of research and innovations, committed to raising a new generation of leaders in the fields of Biology, Biotechnology and Microbiology.

#### **Our Mission**

The Department aspires to produce outstanding graduates through quality teaching, learning and research, thus

creating effective change agents and value adding members of society.

## **Objectives**

- (a) To equip students with practical applications of biological knowledge; as it emphasizes the relevance of biology-based knowledge, environmental and modern molecular Biology skills to the functioning of the various industries.
- (b) To provide for the students an effective Christian background for proper moral upbringing upon which to develop entrepreneurial and problem-solving abilities that would impact positively on the society.
- (c) To provide a wholesome, research-based, participatory and contemporary educational experience in the Life Sciences through a modern and vibrant education system.
- (d) To produce graduates of Biological Sciences who will be specialists in their chosen fields of study and thereby provide adequate and competent manpower for the nation.
- (e) To produce world-class scientists equipped to lead the biological revolution that will transform the nation's

agriculture, medicine, industry and the environment, and thereby eradicate poverty and hunger, combat diseases and ensure environmental sustainability.

### **Philosophy of the Department**

The Department of Biological Sciences is committed to the philosophy of the University which is anchored on raising world leaders who are professionals in their field of study with records of academic excellence coupled with integrity, great sense of responsibility and Christian values. Programmes in the department are designed to provide the students with a thorough, broad and balanced foundation in their fields of study in order to prepare them for career opportunities as well as an environment whereby they could be creative, innovative and self-reliant in the growing and expanding disciplines.

## **Microbiology Programme**

### **Philosophy, Aims and Objectives**

Microbiology is the study of microorganisms, a large and diverse group of organisms that exist as single cells or cell clusters. The Microbiology programme housed in the Department of Biological Sciences is committed to provide basic knowledge in the study of microorganisms and their effect on man and his environment. The programme elaborates the importance of microorganisms in industry, health and environmental sectors of the society.

The programme leads to the award of B.Sc. Microbiology at the end of four years of studies at the University for UTME candidates, or three years for Direct entry and A' level candidates.

### **Vision**

To raise world class leaders with excellent skills and innovations to provide solutions to microbiological related problems in the world at large.

## **Mission**

The Department aspires to produce outstanding graduates that are self-reliant as well as fit perfectly into the Industrial and entrepreneurial needs of the nation.

## **Objectives**

The main objectives of the programme are:

- a) To offer programmes leading to the award of Bachelor of Science (B.Sc.) Microbiology to support scientific and technological development programmes of the country.
- b) To help the students develop cognitive abilities and practical skills relating to solution of problems in both basic and applied aspects of Microbiology in Agriculture, Medical establishments, Environmental studies, Research institutes and other Industries.
- c) To provide effective teaching and cutting-edge research in a student-friendly environment for the purpose of producing well motivated graduates.
- d) To provide courses in Microbiology to students of other departments whose degree options require general knowledge of Microbiology and Biotechnology.
- e) To impact the students with general skills relating to non-subject specific competencies, communication, ICT

knowledge, interpersonal skills, organisation skills and ethical standards.

- f) To raise a total man with Godly character in academic excellence, professionalism, responsibility, integrity and good leadership traits which are in line with the core values of the University.

### **Philosophy**

The Microbiology programme is committed to the philosophy of the University on raising world leaders who are professionals in their field of study with records of academic excellence coupled with integrity, great sense of responsibility and Christian values.

### **Admission and Graduation Requirements**

#### **UTME**

Prospective candidates for the programme must have at least credit level passes in five subjects including English Language, Mathematics, to form the core subjects with credit in three other relevant science courses, Biology, Chemistry, and Physics at the Senior Secondary School Certificate or its equivalent, in not more than two sittings. In addition, an acceptable pass in the Unified Tertiary

Matriculation Examination (UTME) is required for admission into 100-level.

### **Direct Entry**

Candidates with at least two GCE/IJMB A level passes (graded A-E) at the Advanced Level in two relevant subjects (Biology, Botany, Chemistry, Geography, Mathematics and Physics) are qualified for admission into 200-level.

### **Courses and Course Descriptions**

There are six categories of courses for the undergraduate degree programmes of the Trinity University, namely:

#### **a. General Studies Courses**

These enhance students' capacities in various fields of study, which includes communication skills, arts and humanities, social and behavioural sciences, quantification and natural sciences.

**b. Major/Core Courses:** These are mandatory courses in the students' main fields of study. These should account for not less than 70% of credits earned.

**c. Required/Ancillary Courses:** These are compulsory courses in related or relevant fields and should contribute not less than 15% of total credits earned.

d. **Elective Courses:** These are non-mandatory courses outside the student's major field of study designed to give the student basic principles of all major fields of knowledge as they exist in inter-relationship. These will account for not more than 10% of total credits earned.

e. **Optional Courses:** Courses which students can take, based on personal interest.

f. **Pre-requisite Courses:** Courses which a student must take and pass before a follow-up course at the same or higher level can be taken.



# **POLICY ON ACADEMIC PROGRESSION OF STUDENTS**

## **Preamble**

The rating of a student's performance and categorization of the class of degree shall be based on the cumulative grade point average obtained by each candidate in all prescribed courses and approved electives taken at Trinity University.

### **a. Good Standing**

A candidate who has satisfactorily completed all requirements for the degree with an end of session Cumulative Grade Point average (CGPA) of not less than 1.50 and not more than 20 credit units of failed courses, shall be deemed fit to be in Good Standing (GS), and thus shall be promoted to the next academic level in the same course. A student with a CGPA less than 1.50 and more than 20 credit units of failed courses shall be considered Not in Good Standing (NGS). This Category of students shall be promoted to the next level, albeit on probation.

The existing class of honours degree are as indicated below:

First Class - 4.50 & above

2nd Class Upper - 3.50 - 4.49

2nd Class Lower - 2.40 - 3.49

Third Class - 1.50 - 2.39

**a. Repetition of Course.**

A student may repeat only those courses in which he has obtained a grade F. The grade earned for a repeated course will be recorded and used in the computation of the Grade Point Average (GPA) in the usual way.

**b. Probation**

Probation is a status granted to a student whose academic performance falls below an acceptable standard. It serves as a warning to a student that his/her academic progress is not satisfactory. A student whose Cumulative Grade Point Average (CGPA) is below 1.50 with more than 20 credit units of failed courses at the end of a session, earns a period of probation for one academic session. The student could take lighter credit loads, provided the units are not less than 15 in a semester.

**c. Withdrawal or Transfer to a new programme**

A candidate whose CGPA is below 1.50 at the end of a particular period of probation will be required to withdraw from the University. However, in order to minimize waste of human resources, consideration is given to withdrawal from programme of study and possible transfer to another programme in the University, bearing in mind the residency policy of the University. In the circumstance of a change of programme of study, the applicant must satisfy the Basic Entry Requirements (BER) for the new course.

**d. Transfer of Students from Other Universities**

A student may be considered for transfer from another University in Nigeria to Trinity University at 200 or 300 level of a similar programme for a 4-year or 5-year programme respectively, provided the candidate has attained a prescribed CGPA and other criteria prescribed by the Senate of the University.

**e. Late Registration of Courses**

The normal period within which all students must complete course registration formalities shall be two weeks from the date of commencement. Registration formalities that are not completed within the first two weeks shall be considered as

late and will attract penalty fee unless acceptable reasons are given for the lateness.

**g. Carry- Over Courses**

A Student could retake the carry-over course(s) at the next available opportunity, provided that the total number of credit units carried during that Semester does not exceed 20, and the Grade Points earned at all attempts shall count toward the CGPA. At the point of registration of courses, the carry over courses must be registered first before additional/core courses for the semester.

**Duration of Degree Courses**

To qualify for an honours degree, a student shall complete his/her degree requirements within the minimum period prescribed, or a period not exceeding two additional years beyond the prescribed minimum duration.

## STUDENT'S PERFORMANCE EVALUATION

The students' performance in a course shall be evaluated through continuous assessment tests and course examination.

### Continuous Assessment Marks

• Class test/Assignments	20%
• Mid Semester test/ Term Paper	20%
• Examination	60%
<b>TOTAL</b>	<b>100%</b>

**Table 1.1:** Student's Performance Grading System

<b>Percentile Scores</b>	<b>Letter Grades</b>	<b>Grade Point (GP)</b>
70-100	A	5
60- 69	B	4
50-59	C	3
45-49	D	2
0-44	F	0

## STAFF PROFILE

### List of Academic Staff

S/N o	Name	Designation	Status	Qualification	Area of Specialization
1	NWINYI, Obinna C	Professor	Visiting	Ph.D. Microbiology (2012), M.Sc. Microbiology (2003), B.Sc.(Hons) Microbiology (1998)	Environmental Microbiology
2	OLASEHIN DE, Grace I.	Professor	Visiting	Ph.D. Microbiology (2010), M.Sc. Medical Parasitology (1998), B.Sc.(Hons) Microbiology (1995)	Medical Microbiology
3	RAHEEM, Toyosi Yekeen	Associate Professor	Visiting	Ph.D Medical Microbiology (2018), MSc.Medical Microbiology (2006), PGD Microbiology (2002), FIMLT (1993)	Medical Microbiology
4	ADETUNJI, Modupeade C.	Senior Lecturer	Full Time	Ph.D. Food Microbiology and Biotechnology (2014), M.Sc. Food Microbiology and Biotechnology (2010), B.Sc.(Hons) (Food Science and Technology (2005)	Food Microbiology
5	OSHO, Michael B.	Senior Lecturer	Visiting	Ph.D. Microbiology (2013), M.Sc. Microbiology (2003), B.Sc.(Hons) Microbiology (1995)	Industrial Microbiology
6	OLAJUYIG BE,	Senior Lecturer	Visiting	Ph.D. Microbiology (2015),	Environmental Microbiology

	Olubunmi O.			M.Sc. Microbiology (2007), B.Sc.(Hons) Microbiology (2004)	
7	ODUMOSU , Bamidele T.	Senior Lecturer	Visiting	Ph.D Pharmaceutical Microbiology (2013), M.Sc. Pharmaceutical Microbiology (2008), B.Sc. Microbiology (2002)	Pharmaceutical Microbiology
8	OMEIKE, Sunday O.	Lecturer II	Visiting	Ph.D. Microbiology (2018), M.Sc. Microbiology (2013), B.Sc.(Hons) Microbiology (2008)	Industrial Microbiology
9	ARANSIOL A, Michael N.	Lecturer II	Full Time	Ph.D. Microbiology (2019), M.Sc. Microbiology (2011), B.Sc.(Hons) Microbiology (2008)	Environmental Microbiology
10	FAGBEMI, Oluwabusayo T.	Assistant Lecturer	Full Time	M.Sc. Medical Biotechnology (2015), B.Sc.(Hons) Microbiology (2010)	Medical Microbiology
11	AKINNUSI, Ololade O.	Assistant Lecturer	Visiting	M.Sc. Microbiology (2018), B.Sc. Microbiology (2014)	Medical Microbiology

## List of Technical Staff

S/No	Name	Rank	Qualification
1	KUSHIMO Kolawole	Senior Technologist	HND Science Laboratory Technology
2.	DANSO Linda	Technologist II	B.Sc. Microbiology
3.	ADEDAYO Adeyinka	Technologist I	B.Sc. Biochemistry
4.	AMAH Orji	Technologist I	B.Sc. Physics with Electronics

## List of Administrative Staff

S/No	Name	Rank	Qualification
1.	Mr Edwin Agbaike	Assistant Registrar (Faculty Officer)	B.Sc. Accounting, MBA
2.	Miss Deborah Akinpelu	Administrative Officer	B.Sc. Microbiology
3.	Mr. Sunday Abiola	Administrative Officer (Departmental Officer)	B.Sc. Administration
4.	Mrs Helen Odion	Administrative Assistant	OND Business Administration (Moshood Abiola Polytechnic)



## **GRADUATION REQUIREMENTS**

An undergraduate full-time student will be required to register for a minimum of fifteen (15) credit units and a maximum of twenty-five (25) credit units per semester. The minimum total workload expected to be covered for the award of undergraduate qualification will be:

- a.** A minimum of 120 credit units for a four-year degree programme.
- b.** A minimum of 150 credit units for a five-year degree programme and
- c.** A minimum of 180 credit units for a six-year degree programme.
- d.** A minimum of 96 credit units for Direct Entry Students
- d.** Completed the standards for all compulsory and elective courses.
- e.** Obtained a minimum CGPA of 1.50
- f.** Met other requirements that may be prescribed by the Department, Faculty and Senate of the University.
- g.** In partial fulfilment of the requirements for the award of a Bachelor's degree, the Bachelor's degree project will carry a minimum of 6 credit units.

## **CLASS OF DEGREE**

The determination of the class of degree shall be based on the Cumulative Grade Point Average (CGPA) earned at the end of the programme. The CGPA shall be used in the determination of the class of degree as summarized in Table 1.2. It is important to note that the CGPA shall be calculated and expressed correct to two decimal places.

**Table 1.2: Class of Degree Determination with CGPA**

Cumulative Grade Point Average	Class of Degree
4.50- 5.00	First Class
3.50- 4.49	2nd Class Upper
2.50- 3.49	2nd Class Lower
1.50- 2.49	Third Class

## COURSE OUTLINE

**100 Level**

**FIRST SEMESTER**

<b>Course Code</b>	<b>Course Title</b>	<b>Unit(s)</b>	<b>Status</b>
MCB 111	Introduction to Microbiology	3	C
BIO 111	General Biology I	3	C
BIO 117	General Biology Practical I	1	C
MTH 111	General Mathematics I	3	R
PHY 111	General Physics I	3	R
PHY 117	General Physics Practical I	1	R
CHM 111	General Chemistry I	3	R
CHM117	General Chemistry Practical I	1	R
GST 111	Communication in English I	2	C
GST 112	Use of Library & ICT	2	R
EDS 111	Introduction to Entrepreneurship	1	R
CSC 111	Introduction to Computer Science	2	R
CIT 111	IT Certification I: MS Word	0	R
	<b>Sub-Total</b>	<b>25</b>	

**C = Compulsory, R = Required**

## SECOND SEMESTER

Course Code	Course Title	Unit(s)	Status
<b>Compulsory</b>			
MCB 121	Basic Techniques in Microbiology	2	C
BIO 121	General Biology II	3	C
BIO 127	General Biology Practical II	1	C
BTG 121	Introduction to Biotechnology	1	R
MTH 121	General Mathematics II	3	R
PHY 121	General Physics II	3	R
PHY 129	General Physics Practical II	1	R
CHM 121	General Chemistry II	3	R
CHM 129	General Chemistry Practical II	1	R
BIO122	Introductory genetics	2	C
GST 121	Communication in English II	2	C
GST 123	Communication in French	2	R
EDS 121	Entrepreneurship Dev. Studies II	1	R
CIT 121	IT Certification I: MS Excel	0	
	<b>Sub-Total</b>	<b>25</b>	
	<b>Total</b>	<b>50</b>	

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**200 Level****FIRST SEMESTER**

<b>Course Code</b>	<b>Course Title</b>	<b>Units(s)</b>	<b>Status</b>
<b>Compulsory</b>			
MCB 211	General Microbiology	3	C
BIO 211	Introductory Developmental Cell Biology	2	R
BIO 213	Biological Techniques	2	R
BCH 211	General Biochemistry I	2	R
CHM 211	Organic Chemistry I	3	R
CHM 212	Physical Chemistry I	3	R
STA 211	Statistics for Agriculture and Biological Sciences	2	R
EDS 211	Entrepreneurship Development Studies III	1	R
GST 114	Nigerians People and Culture	2	R
GST 213	Peace Studies and Conflicts Resolution	2	R
<b>Electives</b>	<b>Minimum of 2 Units</b>	22	
GST 113	Logic, Philosophy and Human Existence	2	
	<b>Sub-Total</b>	<b>24</b>	

**C = Compulsory, R = Required**

## SECOND SEMESTER

<b>Course Code</b>	<b>Course Title</b>	<b>Unit(s)</b>	<b>Status</b>
<b>Compulsory</b>			
MCB 221	Microbial Genetics and Molecular Biology	3	C
MCB 222	Microbial Ecology	3	C
MCB 224	Soil Microbiology	3	C
MCB 226	Introductory Virology	3	C
CHM 222	Inorganic Chemistry	3	R
BCH 221	General Biochemistry II	2	R
STA 221	Statistics for Agriculture & Biological Sciences II	2	R
EDS 221	Entrepreneurial Development Studies IV	1	R
GST 222	Leadership skills	2	R
	<b>Sub-Total</b>	<b>22</b>	
	<b>Total</b>	<b>46</b>	

**C = Compulsory, R = Required**  
**MCB 121 Prerequisite to MCB 211**

**300 Level****FIRST SEMESTER**

<b>Course Code</b>	<b>Course Title</b>	<b>Unit(s)</b>	<b>Status</b>
<b>Compulsory</b>			
MCB 311	Biodeterioration	2	C
MCB 312	Mycology	3	C
MCB 313	Bacteria Diversity	3	C
MCB 315	Food Microbiology	3	C
MCB 317	Scientific Writing and Presentation	2	C
MCB 319	Pathogenic Microbiology	3	C
CSC 311	Computer Appreciation	2	R
EDS 311	Entrepreneurship Dev. Studies V	1	R
<b>Electives</b>	<b>Minimum of 5 Units</b>	19	
BCH 311	Amino Acids & Protein:	2	
BCH 313	Chemistry & Metabolism	2	
ZOO 311	Carbohydrates: Chemistry & Metabolism Invertebrate Zoology	3	
	<b>Sub-Total</b>	<b>24</b>	

**C = Compulsory, R = Required**

**Choose one Biochemistry and Zoology Course**

## SECOND SEMESTER

<b>Course Code</b>	<b>Course Title</b>	<b>Unit(s)</b>	<b>Status</b>
SIWES 312	Industrial Activities	2	C
SIWES 314	SIWES Visitation	2	C
SIWES 316	Technical Report and Log Book	1	C
SIWES 318	SIWES Seminar	1	C
	<b>Sub-Total</b>	<b>6</b>	
	<b>Total</b>	<b>30</b>	

**C = Compulsory**



**400 Level****FIRST SEMESTER**

<b>Course Code</b>	<b>Course Title</b>	<b>Unit(s)</b>	<b>Status</b>
Compulsory			
MCB 411	Essays in Microbiology	3	C
MCB 412	Virology & Tissue Culture	3	C
MCB 413	Microbial Physiology & Metabolism	3	C
MCB 414	Pharmaceutical Microbiology	3	C
MCB 415	Petroleum Microbiology	3	C
MCB 417	Principles of Epidemiology and Public Health Microbiology	3	C
MCB 418	Environmental Microbiology	3	R
<b>Electives</b>	<b>Minimum of 3 Units</b>	21	
ZOO 411	Biology of Tropical Parasites	3	
	<b>Sub-Total</b>	<b>24</b>	

**C = Compulsory, R = Required**

## SECOND SEMESTER

Course Code	Course Title	Unit(s)	Status
<b>Compulsory</b>			
MCB 421	Project	6	C
MCB 424	Advanced Food Microbiology	3	C
MCB 425	Immunology	3	C
MCB 426	Industrial Microbiology	3	C
MCB 428	Microbiological Quality Control & Assurance	2	C
BOT 426	Plant Pathology	3	R
<b>Electives</b>	<b>Minimum of 3 Units</b>	20	
ZOO 421	Principles of Parasitology	3	
BOT 421	Host Pathogen Relations & Plant Disease Management	3	
	<b>Sub-Total</b>	<b>23</b>	
	<b>Total</b>	<b>47</b>	

**C = Compulsory, R = Required**

**MCB 315 Prerequisite to MCB 424**

## **COURSE DESCRIPTION**

### **MCB 111: INTRODUCTION TO MICROBIOLOGY (C) (1-2-0) (3 UNITS)**

History of the Science of Microbiology; Sterilization and Disinfection; Structure, Ecology and Reproduction of Representative Microbial Genera; Cultivation of Microorganisms; Isolation of Microorganisms; Isolation of Bacteria and Viruses.

### **MCB 121: BASIC TECHNIQUES IN MICROBIOLOGY (C) (0-2-0) (2 UNITS)**

Culturing of Microorganisms; Preparation of Media for Microbial Growth; Isolation of Pure Culture; Streaking, Pour Plates etc; Subculturing Procedure; Staining Techniques for Differentiation of Microorganisms; Enumeration of Microorganisms; Direct and Indirect Procedures; Identification of Microorganisms to include Colonial and Cellular Morphology and Biochemical Procedures.

## **MCB 211: GENERAL MICROBIOLOGY (C)**

**(1-2-0) (3 UNITS)**

Nutrition and Biochemical Activities of Microorganisms; Antigens and Antibodies; Identification and Economic Importance of selected Microbial Groups; Microbial Variation and Heredity.

## **MCB 221: MICROBIAL GENETICS AND MOLECULAR BIOLOGY (C) (2-1-0) (3UNITS)**

Principle of Genetic Analysis; Plasmids and Transposable Genetic Elements; Mutagenesis and DNA Repairs; Bacteriophage and Genetic of Nitrogen Fixation; Mechanism and Nature of Mutation, Induction; Isolation and Characterization of Mutants; Genetic Recombination in Prokaryotes including Transformation, Transduction, Phage Conversion and Conjugation; Recent Techniques in Microbial Genetics; Chemical Coding and Expression of Genetic Information. Fungal Genetics. Principles and Application of Genetic Engineering; Model Systems used for Studying Embryology Differentiation at the Molecular Level; Model Systems in Differentiation Studies; Control

of Cell Proliferation; Molecular Genetics of Haemoglobinopathies.

**MCB 222: MICROBIAL ECOLOGY (C) (1-2-0)  
(3 UNITS)**

Concept and definitions of ecosystems in relation to animals and plants. Established relationships. Microbes and Ecological Theory; Physiological, Morphological and Genetic Adaptations of Microorganisms to Their Environment. Microbial Interactions. Microorganisms in Ecosystem. Microbial Interactions; Microorganisms in Natural Ecosystem, the Life of Microorganisms in Air, Springs, Rivers, Lakes and Seas. Cycling of Elements in Water and Sediments.

**MCB 224: SOIL MICROBIOLOGY (C) (1-2-0)  
(3 UNITS)**

The Characteristic of Soil Environment; Microbial Flora and Fauna of Soils; Microbial Activities in Soil; Nitrogen Cycle; Carbon Cycle; Mineral Transformation by Microorganisms; Ecological Relationship Among Soil Pathogens; Effects of Pesticides on Soil Microorganisms; Biodegradation

and Biofuels Generation. Microbiology of the Rhizosphere.

**MCB 226: INTRODUCTORY VIROLOGY**

**(R) (1-2-0) (3 UNITS)**

General characteristics of plant, animal and bacterial viruses; viral replication, spread and cytopathic effects. Virus classification, purification and assay. Regulation of lytic development and maintenance of the lysogenic state in bacteriophages lambda, P2 and 14 single stranded DNA and RNA phageviroids as pathogens.

**MCB 311: BIODETERIORATION (C) (1-1-0)**

**2UNITS**

Principles of Microbial Deterioration of Materials; Material Subject to Microbial Deterioration: Food, Jet Fuels, Paper, Paints, Textiles and Leather, Metals Etc.; Factors Favoring Deterioration of Materials; Major Microbial Groups Involved in Deterioration; Impact of Processing and New Technologies on Biodeterioration; Biodeterioration Control.

**MCB 312: MYCOLOGY(C) (2-1-0) (3 UNITS)**

Structure, Life Cycles, Physiology and Classification of Fungi. Fungi of Economic Importance. Metabolites of Fungi, Industrial Uses of Fungi, Fungi in Medicine.

**MCB 313: BACTERIAL DIVERSITY (C)**

**(2-1-0) (3 UNITS)**

The Morphology, Life Cycle and Biochemical Characteristics of Bacteria; Systematic Study of Bacteria and Other Prokaryotes, Their Nature, Characteristics, Identification and Isolation.

**MCB 315: FOOD MICROBIOLOGY (C) (1-2-0)**

**(3 UNITS)**

The Distribution, Role and Significance of Microorganisms in Food; Intrinsic and Extrinsic Parameters of Foods That Affects Microbial Growth; Food Spoilage and Food Borne Disease; Microorganisms indices of Food Sanitary Growth and Food Microbiology Standards; Disease of Animals Transmittable to Man via Food Products.

**MCB 319: PATHOGENIC MICROBIOLOGY**

**(C) (3-0-0) (3 UNITS)**

Structure, Production and Classification of Pathogenic Fungi; Laboratory Methods of Study, Pathology and Immunology, superficial Mycoses and Actinomycoses.

**SIWES 321: INDUSTRIAL ACTIVITIES (C)**

**(2UNITS)**

Students would be attached to Industries for a Period of Six Months. Students would be Expected to Receive Sufficient Practical Training in their Respective Fields under Industry Based Supervisors. The Employer is expected to assist the Students' Performance during the Period of Attachment.

**SIWES 322: SIWES VISITATION (C) (2UNITS)**

Supervisors from the University shall pay visits to the Student on Industrial Attachment before the expiration of The SIWES exercise. During the Course of the Visitation, Lecturers shall interact with the Students and their Industrial Based



Supervisors. It is Recommended that Lecturer from Student's Disciplines or Related Discipline Should Be Assigned to Supervised Students on Industrial Attachment. On Rare Occasions when Students cannot be supervised due to Logistic Reasons, such Students Shall Be Assessed at the Department under the Supervision of the Head of Department and the SIWES Unit Shall be notified.

**SIWES 323: TECHNICAL REPORTS & LOG BOOK (C) (1 UNITS)**

This Shall Normally Be divided into Two Parts:

**PART A:**

Each Student in Industrial Attachment is expected to have a Copy of the 'Log Book' which is used to Keep Daily/Weekly Records of Activities Undertaken while in The Industry. The Entries in the Log Book Should Be Detailed Enough, Written in Legible and Simple English. It Must Be Endorsed Daily/Weekly by The Industry Based Supervisor and The University Based Visitor. This Aspect Shall Carry a Total of 65 Marks.

## **PART B:**

On Completion of the Industrial Attachment, Students are required to submit a 'Technical Report' to their Respective Departments. This is expected to be a Concise Analysis of Job Done, Problems Encountered, Solution Proffered and Experience Acquired During the Period of Industrial Attachment. This Aspect Shall Carry a Total of 35 Marks.

## **SIWES 324: SIWES SEMINAR (C) (1 UNITS)**

This is The Final Aspect of The SIWES Assessment where Students will be expected to Formally Present their Report and Share Experiences at a Departmental Seminar. All Participating Students are Expected to give a Verbal Presentation of all they did and Suggest Answers to Questions Raised. This Shall be Done not Later than One Month after the Completion of the SIWES Program. This Exercise is a Very Important Requirement as it Shows the Depth of Understanding of The Experience Gained during the Period of Attachment.

**MCB 411: ESSAYS IN MICROBIOLOGY (C)  
(3 UNITS)**

Students are to Participate in Departmental Seminars throughout the Session. Each student will Presents a Seminar on an Assigned Current Topic or on his/her Research Project. Consent of the Head of Department is Required before Presentation.

**MCB 412: VIROLOGY & TISSUE CULTURE  
(C) (1-2-0) (3 UNITS)**

Structure, Properties and Classification of Viruses; Principles of Isolation, Cultivatioin and Maintenance of Plant and Animal Cells In Vivo; Application of Cell Culture Techniques In Virology; Viruses as Agents of Diseases In Animals.

**MCB 413: MICROBIAL PHYSIOLOGY &  
METABOLISM (C) (2-1-0) (3 UNITS)**

Dynamics of Growth; Nutrition and Energy Metabolism of Microorganisms; Effects of Physical and Chemical Factors on Growth; Biochemistry of Various Microbial Processes Such as Transport, Regulation and Respiration; Biosynthesis of Microbial Products; Buffer Preparation and

Standardization; Basic Separation Techniques in Microbiology, Dialysis, Salting Out, Gel Filtration, Electrophoresis Etc; Assay Techniques For Various Metabolites Including Microbial Enzymes, Acid

**MCB 414: PHARMACEUTICAL  
MICROBIOLOGY (C) (1-2-0) (3 UNITS)**

The Chemistry of Synthetic Chemotherapeutic Agents and Antibiotics; Production and Synthesis of Antibiotics and Anti-Microbial Agents; Quality Control of Pharmaceutical Products; Concepts of Growths and Death in Microorganisms; The Mode of Action and Essay of Anti-Microbial Agents; Concepts of Antibiotics Sensitivity and Resistance as Related to Microbial Physiology.

**MCB 415: PETROLEUM MICROBIOLOGY  
(C) (2-1-0) (3UNITS)**

Biogenesis of Fossil Fuels with Emphasis on the Role of Microorganisms; Petroleum Prospecting and Secondary Recovery; Microbial Corrosion of Pipes and Equipment. Methanogenesis and Methanotrophy. Effects of Oil Spill on Microbial Activities in Aquatic and Terrestrial Ecosystems;

Biodeterioration and Biotransformation of Hydrocarbons.

**MCB 417: PRINCIPLES OF EPIDEMIOLOGY AND PUBLIC HEALTH MICROBIOLOGY (C) (2-1-0) (3 UNITS)**

Statistical Applications to Epidemiology; Nature of Epidemiological Investigation. Spectrum of Infection; Hard Immunity Latency of Infections. Multi-Factorial Systems in Epidemics. Zoonosis. Antigenic Drifts. Biological Products for Immunization – Recommended Immunization Schedules. International Control of Infectious Diseases.

**MCB 418: ENVIRONMENTAL MICROBIOLOGY (C) (1-2-0) (3 UNITS)**

Impact Assessment of Microbial Contamination of Soil, Water and Air in relation to the Deterioration of the Environment. Soil, Air and Water Pollution. Waste Disposal and Management. Methods of Water and Sewage Treatment with Emphasis on Specific Microorganisms Involved. Disease

Transmission by Water. Biological and Chemical Oxygen

**MCB 424: ADVANCED FOOD**

**MICROBIOLOGY (C) (2-1-0) (3UNITS)**

Advanced Ecology, Taxonomy, Biochemistry and Analytical Technology of Bacteria, Yeasts, Fungi and Viruses Associated with Food Spoilage; Food-Borne Diseases and Fermentations. Emphasis on New Developments in Food Microbiology; Economic Consequences for The Production of Food Ingredients.

**MCB 425: IMMUNOLOGY (C) (1-2-0) (3 UNITS)**

Introduction; Historical Background, Innate and Acquired Immunity; Antigens, Antibodies, Cellular Immunity; Immunological Tolerance and Suppression; Surgical Grafting; Complement System; Hypersensitivity; Immunological Anomalies; Diagnostic Immunology, Vaccine,

Effector Systems of Parasite Killing and Nature of Resistance in Plants.

### **MCB 426: INDUSTRIAL MICROBIOLOGY**

**(C) (2-1-0) (3 UNITS)**

Fermentation Systems; Designs and Use of Fermenters; Microorganisms of Industrial Importance; Classification of Microbial Products by Use; Relationship between Primary and Secondary Metabolism; Characteristics, Sources and Strain Improvement of Industrial Microorganisms; Microbial Growth and Product Formation in Industrial Processes; Media for Industrial Fermentations. Foaming, Major Products of Industrial Microbiology: Enzyme Production and Immobilization; Production of Vitamins, Amino Acids, Antibiotics, Organic Acids, Beer and Wine.

### **MCB 428: MICROBIOLOGICAL QUALITY**

**CONTROL&ASSURANCE (C) (2-0-0) (2 UNITS)**

A Theoretical and Practical Consideration of the Management of Microbiological Quality Assurance. HACCP, Cleaning and Sanitation. Microbiological

Specifications and Regulations. Local and International Approaches to Obtaining Safe Food. Management and Quality Assurance in The Microbiology Laboratory.

### **MCB 421: PROJECT (6 UNITS)**

Each Student is expected to carry out a Research Investigation on any Area of Microbiology under the Supervision of any Academic Staff. The Research could be Investigative, Basic or Applied, but usually directed at solving an Identified Problem Related to Microbiology.

The Student may be expected to make an Oral Presentation at a Seminar of the Project Plan and/or a Literature Review on the Project Topic before The Investigation and/or of the Findings after the Completion of the Research.

A final Report on the Research Project should be Compiled, Typed and bound in a Format Designed by the Department. The Seminar Presentation(s), Project Reports, and the Student Performance at a Viva-voce Defense before a Panel of Internal and External Examiners will be used in Different Degrees in the Assessment of the Student's Project.



**BIO 111: GENERAL BIOLOGY I (C) (2-1-0)**  
**(3 UNITS)**

Cell Structure and Organization; Functions of Cellular Organelles, Diversity, Characteristics and Classification of Living Things; General Reproduction; Interrelationship of organisms; Hereditary and Evolution; Elements of Ecology; Types of habitat.

**BIO 121: GENERAL BIOLOGY II (C)**  
**(2-1-0) (3 UNITS)**

A Generalized Survey of the Plant and Animal Kingdoms Based Mainly on Study of Similarities and Differences in the External Features; Ecological Adaptation of these Forms.

**BIO 117: GENERAL BIOLOGY**  
**LABORATORY I (C) (0-1-0) (1 UNIT)**

This Laboratory Course Reinforces the Understanding of Cellular, Molecular and Genetic Processes Taught in General Biology I Lectures. Exercises Include the Use of Microscope in Examination of Cells and Tissues, Osmosis,

Diffusion, Cellular Respiration, Mendelian Genetics, Taxonomic Classification and Operation of Basic Laboratory Equipment.

**BIO 127: GENERAL BIOLOGY**

**LABORATORY II (C) (0-1-0) (1 UNIT)**

Laboratory Course in General Biology II Intended for Science Majors. Topics Include Application of Scientific Method, Investigations of Structure and Function of Plants, Animals, Fungi, Protists and Prokaryotes.

**BTG 121: INTRODUCTION TO**

**BIOTECHNOLOGY (R) (1-0-0) (1 UNIT)**

Historical Development; Application and Implementations of Molecular Biology including Ethical and Social Controversies.

**BIO 122: INTRODUCTORY GENETICS I**

**(C) (2-0-0) (2 UNITS)**

The Subject Matter of Genetics; Heritable and Non-heritable Traits; A Short History of Genetics; Sexual and Asexual Reproduction; Chromosome Number and Structure; chromosomes and Genes;

Meiosis and Mitosis; Alternation of Generations; The Transmission of Hereditary Character; Mendelism. Aspects of Human Genetics; Pedigree Analysis; Further Consideration of Various Deviations from Basic Principles.

### **BIO 211: INTRODUCTORY**

#### **DEVELOPMENTAL CELL BIOLOGY (R)**

**(2-1-0) (3 UNITS)**

History and present trends in cell biology.

Reproduction, cell division, cell differentiation and growth of cells. A brief study of the molecular basis of cell structure and development.

Organelles. Proteins and nucleic acids. The genetic code and its relationship to cellular function.

### **BIO 213: BIOLOGICAL TECHNIQUES**

**(R) (1-1-0) (2 UNITS)**

Microscopy; Histological techniques; Photography; Colorimetry; Photometry; Chromatography; Conductometry; Biological illustration; Sampling techniques; Herbarium techniques.

### **ZOO 311: INVERTEBRATE ZOOLOGY (E)**

**(2-1-0) (3 UNITS)**

The Systematic, Inter-Relationship and Basic Organization of the Invertebrates i.e. Protozoan, Coelenterate, Platyhelminthes, Nematodes, Annelida, Mollusca, Arthropods and Echinodermata.

### **ZOO 411: THE BIOLOGY OF TROPICAL**

**PARASITES(E) (2-1-0) (3 UNITS)**

Classification, Adaptation, Morphology. Anatomy, Life Cycle and Other Features of Interest in the Protozoans, Platyhelminthes, Nematodes and Parasitic Arthropods; Drawing Particular Attention to the Various Adaptations to the Drawing of Life Exhibited by Selected Members of the Group

### **ZOO 421: PRINCIPLES OF PARASITOLOGY**

**(E) (2-2-0) (4 UNITS)**

Evolution of Parasitic Mode of Life. Nature of Parasitism in Relation to Other Forms of Animal Associations. Host-Parasitic Relationships. Epidemiological Studies and Control Measures of

Importance Tropical Parasitic Diseases and The Role of Vector in The Transmission of These Diseases.

**BOT 416: PLANT PATHOLOGY (R) (2-1-0) (3 UNITS)**

Principles and Concepts in Plant Pathology. The Concept of Disease, Infection, Pathogenesis, Host-Pathogen Relationship and Methods and Theory of Biological and Chemotherapy.

**GENERAL STUDIES COURSES**

**CSC 111: INTRODUCTION TO COMPUTER SCIENCE (R) (1-0-1) (2 Units)**

History of Computer, Functional Components of Computer, Characteristics of A Computer, Problems Solving, Flowchart, Algorithms, Computer Programming, Statements, Symbolic Names, Arrays Subscripts, Expressions and Control Statements. Introduction to BASIC or FOTRAN Programming Language and Computer Applications

## **GST 111 COMMUNICATION IN ENGLISH**

### **I (C) (1-0-1) (2 Units)**

Effective Communication and Writing in English, Language Skills, Writing of Essay, Comprehension, Sentence Construction, Outline and Paragraphs, Collection and Organization of Materials and Logical Presentation; and Punctuation. Logical Presentation of Papers, Phonetics, Introduction on Lexis, Art of Public Speaking and Oral Communication, Figures of Speech and Report Writing

### **GNS 112: USE OF LIBRARY & ICT (R) (1-0-1) (2 Units)**

Brief history of libraries; Library and education; University libraries and other types of libraries; Study skills (reference services); Types of library materials, using library resources including e-learning, e-materials, etc; Understanding library catalogues (card, OPAC, etc) and classification; Copyright and its implications; Database resources; Bibliographic citations and referencing. Development of modern ICT; Hardware technology; Software technology; Input devices; Storage devices;

Output devices; Communication and internet services; Word processing skills (typing, etc).

**GST 113: LOGIC PHILOSOPHY AND HUMAN EXISTENCE (E) (1-0-1) (2 Units)**

A brief survey of the main branches of Philosophy Symbolic Logic Special symbols in symbolic Logic-conjunction, negation, affirmation, disjunction, equivalent and conditional statements law of tort. The method of deduction using rules of inference and bi-conditionals qualification theory. Types of discourse, Nature or arguments, Validity and soundness; Techniques for evaluating arguments; Distinction between inductive and deductive inferences; etc. (Illustrations will be taken from familiar texts, Including literature materials, Novels, Law reports and newspaper publications).

**GST 114: NIGERIAN PEOPLES AND CULTURE (R) (1-0-1) (2 Units)**

Study of Nigerian history, culture and arts in pre-colonial times, Nigerian's perception of his world, culture areas of Nigeria and their

characteristics, evolution of Nigeria as a political unit, indigene/settler phenomenon, concepts of trade, economic self-reliance, social justice, individual and national development, norms and values, negative attitudes and conducts (cultism and related vices, re-orientation of moral environmental problems.

**GST 213: PEACE STUDIES AND CONFLICT RESOLUTION (R) (2 UNITS)**

Basic Concepts in peace studies and conflict resolution; Peace as vehicle of unity and development; Conflict issues; Types of conflict, e. g. Ethnic/religious/political/ economic conflicts; Root causes of conflicts and violence in Africa; Indigene/settler phenomenon; Peace – building; Management of conflict and security. Elements of peace studies and conflict resolution; Developing a culture of peace; Peace mediation and peace-keeping; Alternative Dispute Resolution (ADR). Dialogue/arbitration in conflict resolution; Role of international organizations in conflict resolution, e.g. ECOWAS, African Union, United Nations, etc. This course examines how the AU, ECOWAS, EU, UN, through peace keeping,



contributes to international peace and security. It explores the extent to which UN intervention has become possible and desirable in the 'new world order'

**GST 224: Leadership Skills: ( R) (2 Units: LH 30)**

Transformation is a fundamental shift in the deep orientation of a person, organization or society such that the world is seen in new ways and new actions and results become possible that were impossible prior to the transformation. Transformation happens at the individual level but must be embedded in collective practices and norms for the transformation to be sustained. Leadership Development Programme (LDP) proposes novel approaches to teaching and learning, which emphasizes the practical involvement of participants. It is interactive and involves exercises and actual implementation of breakthrough projects by teams that make difference in the lives of the target population. In this course, leadership concepts comprising of listening, conversation, emotional intelligence, breakthrough initiatives, gender and

leadership, coaching and leadership, enrolment conversation and forming and leading teams will be taught

**EDS 111          ENTREPRENEURSHIP DEV. STUDIES I (R) (1-0-0) (1 Unit)**

The entrepreneurial courses are divided into two parts in the academic curriculum; general studies where students would be taught the basic concept of becoming a successful entrepreneur and specific studies, where students would choose a venture to develop their entrepreneurship skills on. Students will learn the “DO your Venture” ideology, which will teach them the common path entrepreneurs take, conceptual framework for evaluating opportunities, problem appreciation, development and testing of ideas and gathering customer feedbacks. They will also learn the tools and techniques for generating ideas such as lean Canvas.

**EDS 121: ENTREPRENEURSHIP DEVELOPMENT STUDIES II (R):**

This course will teach students to look at the world through the

lens of problem discovery and problem solving. Students will explore problems that they see in their life's and in the world and evaluate their potential for entrepreneurial innovation. Students will iterate toward solutions that are just right. Students will gain a broad overview of entrepreneurship strategy with insights they can apply to their venture regardless of location, industry or venture stage. Students would also engage tools and strategies of entrepreneurial bootstrapping, and apply them to designing the strategy for diffusing user innovation and problem-solving using road maps.

**EDS 211: ENTREPRENEURSHIP DEV.  
STUDIES III (R) (1-0-0) (1 Unit)**

Students would be grouped based on the skills they wish to learn. They would be taught practically on different vocational skills and students will present project works hand made by themselves in their respective vocation at the end of the semester.

## **EDS 221: ENTREPRENEURSHIP DEV.**

### **STUDIES IV (R) (1-0-0) (1 Unit)**

The course will provide students with an enhanced understanding of the role of people management in organizational context. In this marketing course, they will learn the fundamentals of marketing management, as they gradually learn advanced theories and applications through real world business examples, illustrations, cases and exercises. They will learn how marketing management tools can be used to increase customer base, improve customer satisfaction and increase company's overall perceived value.

## **EDS 311: ENTREPRENEURSHIP DEV.**

### **STUDIES V (R) (1-0-0) (1 Unit)**

This course will introduce students to the Design Thinking process and illustrate best practices for each step along the way. They will utilize everything they learn in this course to create their very own project. In doing so, they will learn many practical and applicable skills such as user research and rapid prototyping.

**CSC 311: COMPUTER APPRECIATION (R)**  
**(2-0-1) (2 Units)**

Definition and Attributes of a Computer; Uses of Computer: Text Manipulation, Calculation, Logical Function, Text Analysis Commands Etc. Computer People – Operators, Programmers, System Analyst. Computer System – Input Devices, Output Device, Extra Memory, Serial Access Stores, Random Access Stores, Software and The People Ware. Classification/Categorization: Mainframe, Mini, Micro and Super Computer, Operating Systems, Flowchart Etc. Personal Computer Usage & Handling: Getting Started as a User, Directory, Diskette Formatting, Copying, Word Processing. Introduction to Basic Programming & Office Automation.

## LIST OF SOME LABORATORY EQUIPMENT

SN	ITEMS	QTY
1.	Biosafety Cabinet	1
2.	UV-Visible Spectrophotometer	1
3.	Haematocrit Centrifuge	1
4.	Anaerobic jar	1
5.	Water Distiller	1
6.	pH meter	1
7.	Vortex mixer	1
8.	Tourniquet	5
9.	Refrigerator	1
10.	Water bath	1
11.	Deep freezer (-23°C)	1
12.	Hot plate with Magnetic stirrer	1
13.	Haematocytometer	1
14.	Blood Bank Unit (Shared Facility)	1
15.	Flask Shaker	1
16.	Autoclave	1
17.	Colony counter	1
18.	Incubator	1
19.	Hot air Oven	1
20.	Top loading balance	2
21.	Analytical balance	1
22.	Binocular Microscope	10
23.	Flourescence Microscope	1

24.	Gel Electrophoresis unit	<b>1</b>
25.	Centrifuge	<b>1</b>
26.	Electronic compact scale	1
27.	Thermostatic Water Bath	1
28.	Laminar Flow Cabinet	1
29.	Conductivity meter	1
30	Vacuum desiccator	1
31	Test tube shaker	1

## **RESEARCH CLUSTERS AND ACCOMPLISHMENTS**

The Department of Biological Sciences is engaged in a number of research collaborations with reputable research Institutes, hospitals and organization in the country and internationally which are discussed briefly below:

-The University just signed a memorandum of understanding with the Nigeria Institute of Medical Research (NIMR) Yaba Lagos (August, 2021). The institute is a few kilometers away from our University and this avails our students and staff the opportunity of easy access to their laboratories. The Central Research laboratory of the Institute is equipped with the state of the art equipments especially the molecular biology equipment such as PCR machine, Sequencer, Primer laboratory etc. The 400L students in the forth coming session would be assigned to supervisors in the Institute to co supervise their project, this will avail them the opportunity of having hands- on practical experience on the use of modern laboratory equipment. In addition, our students have the opportunity of having their Industrial training at the Institute at a highly discounted price unlike the huge amount that others pay. In addition, the staff of NIMR especially those with Ph.D are engaged as part time teaching staff of the university. This will help in fostering the relationship between the town and gown sector of the nation and also prepares our students ready for the Industrial world.

-Apart from this, the Directorate of Research, Innovation and Development (TUDRID) section of the University houses some research clusters to foster research activities and collaborations with other institutions locally and internationally. One of the clusters that is under the Biological Sciences Department is the:



**-The Center for Microbiological Research and Innovation (C4MRI)** is domiciled in the Biological Science Department of the Institution. The center aims to provide evidence-based information for actions to address food security, health and bioeconomy issues plaguing Nigeria and Africa.

## AWARDS AND ACCOMPLISHMENTS

1. Dr. T. Y. RAHEEM, was awarded a USAID-K4Health grant for e-learning research and capacity building (2012-2016)
2. Dr. M. C. ADETUNJI received a Post-Doctoral Fellowship Award by North- West University, South Africa, July 1st 2017- 30th June 2020.
3. Dr. M. C. ADETUNJI was awarded a President Grant by the Society for Applied Microbiology (SFAM) United Kingdom to attend the 8th Congress of European Microbiologist (FEMS 2019), 07-11 July 2019, Glasgow, Scotland. (Grant worth- GBP 1500).
4. Dr. M. C. ADETUNJI received FUNAB IFSERAR Research Grant (2011-2013): Institute of Food Security, Environmental Resources and Agricultural Research support for PhD laboratory analysis  
Grant worth- ₦700,000
5. Dr. M. C. ADETUNJI was awarded an Education Trust Fund (ETF) 2012: Research grant for purchase of laboratory Equipment for Ph.D. research work. An Ultraviolet (UV-360nm) light for viewing of aflatoxigenic fungi and a chest freezer for keeping of microbiological culture was donated to the Food Microbiology Department, Federal University of Agriculture Abeokuta on my behalf.  
Grant worth- ₦1,000,000
6. Dr. M. N. ARANSIOLA received a Doctorate Scholarship Award by University of Ibadan, Ibadan (July 2014 – July 2017)

7. Mrs. O. T. FAGBEMI was awarded Netherlands Fellowship Masters Degree Award (2013-2015)

## LINKAGES AND COLLABORATIONS

The University has an outstanding MoU with some notable Research Institutes and Hospitals in Nigeria, namely:

<b>S/N</b>	<b>ORGANISATION</b>	<b>STATUS</b>
1	Nigerian Institute of Medical Research (NIMR)	MoU
2	Lagos State University Teaching Hospital (LASUTH)	MoU
3	Lagos State Health Service Commission	MoU
4	Educational Advancement Centre	MoU
5	Commit Technology and Consult Ltd.	MoU
6	New Horizon Systems Solution Ltd.	MoU
7	Edustart Global Foundation	MoU
8	Nigeria Employers' Consultative Association (NECA)	Registered Member
9	Nigerian Association of Small and Medium Enterprises (NASME)	Registered Member

## PENALTIES FOR EXAMINATION MISCONDUCTS

S/N	Misconducts	Penalties
1.	Possession/copying of any written materials relevant to the examination, tests and assignments.	Rustication for two semesters.
2.	Impersonation	Expulsion
3.	Plagiarism	Rustication for one semester.
4.	Unauthorized access to examination materials	Expulsion
5.	Unauthorized collection of items from another student during an examination without the knowledge of the invigilator	Letter of caution
6.	Falsification of evaluation form and other academic records or documents	Expulsion
7.	Appearing for examination, without meeting attendance requirement	Letter of caution and prevention from writing the examination.
8.	Disobedience to instructions/ disruption during an examination/harassment of invigilator	Disqualification from the examination.
9.	Harassment of Invigilators	Rustication for one semester.
10.	Anti-safety behaviour during practical, workshops, studio work, etc.	Letter of caution
11.	Attempted inducement of examiners and invigilators	Disqualification from the examination
12.	Aiding and abetting examination misconduct	Expulsion.
13.	Destruction of evidence of examination misconduct	Rustication for one semester

14.	Refusal to complete examination misconduct form	Rustication for one semester.
15.	Any previous arrangement made for access to examination materials whether it succeeds or not	Rustication for two semesters.
16.	Refusal to submit examination scripts	Failure in the examined course.
17.	Any other misconduct recorded from time to time	Penalty shall be determined based on the recommendation of the panel.



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