

REDEEMER'S UNIVERSITY



DEPARTMENT OF BIOLOGICAL SCIENCES

**POSTGRADUATE DEGREE PROGRAMME IN
MOLECULAR BIOLOGY AND GENOMICS**

COURSE GUIDE 2018/2019

TABLE OF CONTENT		Page
1.0	Institutional Information	4
1.1	Principal Officers of the University	4
1.2	Description of the University Logo	4
1.3	Motto of the University	4
1.4	Vision of the University	4
1.5	Mission of the University	4
2.0	History of the Department	6
2.1	Introduction	7
2.2	Program Philosophy	8
2.3	Aims and Objectives	8
3.0	Staff List	9
3.1	Academic staff List	9
3.2	Technical Staff List	10
3.3	Administrative Staff	10
4.0	Postgraduate Programs	11
4.1	Domain of Program	11
4.2	Admission Requirement	11
4.3	Areas of Specialisation	12
4.4	PG coordinators	12
4.5	Pre-Reading	13
4.6	Duration of Program	13
4.7	Academic Regulation	16
4.8	Academic Planning	16
4.9	Project Advisor	18
4.10	Requirement for Graduation	19
5.0	Academic Standards	21
5.1	Program Requirement	21
5.2	Course Evaluation	21
5.3	Thesis Advisory Committee	23
5.4	External Examination System	23
5.5	Grading Procedures	24
6.0	Programs	25
6.1	General Courses	25
6.2	Postgraduate Foundation Courses	25
6.3	List of Courses	28
6.4	Course Synopsis/Description	30
7.0	Resources	40
7.1	Feedback Mechanism	40
7.2	Career Path	40
7.3	Academic Board of Studies	42

7.4	Contacts	43
Appendix		
1	Criteria for validity Assessment	44
2	List of journals available at Tekena Tamuno Library	45
3	List of e-journals	68
8.0	Scholarship Policy	77
9.0	Sexual Harassment Policy	80

1.0 INSTITUTIONAL INFORMATION

1.1 Principal Officers of the University

NAME	OFFICE
Prof. Anthony E Akinlo	Vice-Chancellor
Prof. S. Kayode Adekeye	Deputy Vice-Chancellor
Mr. Olukayode E. Akindele	Registrar
Mrs. Mofoluso Olutayo-David	Bursar
Dr. Emmanuel L. Adebayo	Librarian

1.2 Description of University Logo

The university logo is a **Dove** and an **Open Book**. The dove symbolizes the Holy Spirit shining the light of knowledge on the University students from every nation of the World.

The University colours are **Blue, White, Green** and **Gold**. The blue represents the love of God which is shed abroad in our hearts and binds all cadres of the University together irrespective of color, class or creed. White represents holiness and purity of thought, word and deed that are essential ingredients of the peace that will exist at all times in the University. Green signifies power, fruitfulness and progress. Gold signifies light and knowledge since knowledge gives power. The University exists to empower students to be fruitful in every facet of life and in making progress taking the nation to greater heights.

The University acronym "RUN" is derived from its name, Redeemer's University by combining the letter "R" from REDEEMER'S with letters "UN" from UNIVERSITY.

1.3 Motto of the University:

RUNNING WITH A VISION

1.4 Vision of the University

To produce a future generation of God fearing, creative, innovative and inventive entrepreneurs motivated to build and sustain a better Nigeria and a better world.

1.5 Mission of The University

Our mission is to raise graduates who will turn Nigeria into a country of trustworthy and upright youths, truthful and honest technicians, frank and candid academics, reliable and scrupulous business men and women, caring and compassionate doctors, honourable and

truthful politicians, open and sincere public servants, descent and law abiding citizens, just and impartial judges, honest and immovable bankers and above all a nation of men and women of distinction, dignity and decorum.

2.0 HISTORY OF THE DEPARTMENT

The Department of Biological Sciences was established in the year 2005 as one of the four pioneering departments in the College of Natural Sciences. The department started with five (5) lecturers (1 Professor, 1 Senior Lecturer, 1 Lecturer II, 1 Assistant Lecturer and 1 Graduate Assistant). The only laboratory was sparsely equipped with four (4) microscopes and a few other equipment and apparatus.

By 2010, the academic staff strength had doubled comprising 2 Professors, 1 Senior Lecturer, 2 Lecturer I, 5 Lecturer II, and 2 Assistant Lecturers. One Senior Technologist and two Laboratory Assistants had also joined the Department. The Department then could boast of two laboratories with over 60 microscopes and array of equipment such as UV spectrophotometer, absorption spectrophotometer, refrigerated centrifuge, thermal cyclers, ELISA plate reader and washer, soxhlet extractor, cooled incubator, CO₂ incubator, fluorescent microscope and many others. The department also built a modern animal house for teaching and research.

Late in the year 2013, the University won a World Bank award as African Center of Excellence for Genomics of Infectious Diseases (ACEGID). This Center is domiciled in the Department of Biological Sciences and has boosted the profile of the Department and the University in the area of research especially in the field of genomics. Currently the Department boasts of 14 academic staff members excluding 4 Adjunct Senior Lecturers from Harvard University, USA, one Adjunct Professor from the University of Cambridge, Cambridge, UK, and One adjunct Professor from the University of Nebraska, Medical Center, Nebraska, USA.

In 2014, the Department acquired an LC-MS (HPLC-MS) equipment, the first private University and second University in Nigeria to do so. In addition, through the World Bank funded ACEGID project the University can boast of three Illumina MiSeq Sequencing machines, an ABI 3500XL Automatic Sanger Sequencer, ABI 7500 Fast Real-time PCRs, Automatic DNA extractor, Gel documentation device, Roche Light cycler, Bioanalyzers, Illumina Eco Machine, Luminex, oligosynthesizer and many others.

In 2017, National University Commission (NUC) accredited two new programs namely Master's degree in Molecular Biology and Genomics and doctoral degree in Molecular Biology and Genomics thus enabling the department to produce graduates in the program. Overall the departments have graduated a total of 17 master's degree students.

2.1 Introduction

This guide is to give you a broad overview of the course and what to expect in Redeemer's when you arrive for your programme. Other information will be provided in the form of the University hand book and course curriculum.

The graduate programme in Molecular Biology and Genomics provides courses in advanced and applied areas of Molecular Biology and Genomics leading to M.Sc. and PhD. degrees. The program is practical and research-oriented and seeks to ensure high level of academic and research qualities, so that students can acquire the relevant knowledge and skills needed in infectious pathogen genomics. As an African Centre of Excellence for Genomics of Infectious Diseases (ACEGID), with funding from the World Bank and National Institutes of Health (NIH), the University is at the fore-front of studies on the genomics of infectious pathogens and as such is furnished with facilities and several platforms to strengthen expertise and capacity in this regard.

This programme is therefore intended to equip graduate students with theoretical and practical knowledge of molecular biology and genomics, including genomic technologies and tools to conduct research aimed at gaining a clearer understanding of infectious pathogens, while developing capacity to diagnose the diseases they cause, investigate and control outbreaks, understand transmission and evolution dynamics, develop drugs and target vaccines, and finally monitor the emergence and widespread of drug- resistance in these pathogens. Though the main research activity of the department is on the genomics of infectious diseases, with particular focus on the pathogens that cause fevers in sub-Saharan Africa, using new sequencing technologies and microbial metagenomics, students can acquire general competencies which can be applied in other specialties in their career or as they seek new knowledge. Students trained in this programme will be provided with outstanding, flexible didactic training experience to prepare them for independent and innovative careers

in research (biomedical, pharmaceutical or industrial), academics, medicine, biotechnology, environmental sciences and forensics. In addition, students will be equipped with the capability for competitive post-doctoral positions in choice institutions anywhere in the world.

2.2 Programme Philosophy

The programme's philosophy is geared towards producing graduates with knowledge and skills in molecular biology and genomics, including genomic technologies to conduct research aimed at gaining a clearer understanding of infectious pathogens, while developing capacity to diagnose the diseases they cause, investigate and control outbreaks, understand transmission and evolution dynamics, develop drugs and target vaccines, and finally monitor the emergence and widespread of drug-resistance in these pathogens

2.3 Aims and Objectives

The graduate programme in Molecular Biology and Genomics is designed to:

- Equip graduate students with comprehensive knowledge of the principles and applications of molecular and genomics technologies.
- Foster scholarship and provide resources and support that will promote cutting-edge genomics research on health in Africa.
- Train and produce experts in molecular biology and genomics who are prepared scientifically and technologically to identify and address real-life challenges with molecular and genomics tools.
- Develop a critical mass of well-trained young African scientists who will use the knowledge of genomics for the control and management of infectious diseases in Africa and elsewhere.

3.0 STAFF LIST

3.1 Academic Staff

S/N	NAME	DEGREE	STATUS	DEGREE PROGRAM ME	RESEARCH INTEREST	E-MAIL
1	I. O.O. Komolafe	DVM (Ib); M.Sc. (Birmingham); Ph.D. (Glasgow)	Professor/HOD	Microbiology	Veterinary/Medical Microbiology Buruli ulcer	komolafei@run.edu.ng
2	C. Happi	B.Sc. (Yaounde); M.Sc., Ph.D. (UI)	Professor	Molecular Biology and Genomics	Microbial and Human Genomics	happic@run.edu.ng
3	A. Adeleke	BSc, MSc, PhD	Professor ACEGID Programme*	Business Administration	Entrepreneur study	adelekea@run.edu.ng
4	A. Osho	B.Sc. (OOU); M.Sc., Ph.D. (UI)	Professor	Microbiology	Antimicrobial/Medicinal Plant Properties	oshoa@run.edu.ng
5	O.A. Folarin (Mrs.)	B.Sc., M.Sc, Ph.D. (UI)	Associate Professor	Biochemistry	Microbial genomics	folarino@run.edu.ng
6	Femi Ayoade	B.Sc. (UI); M.Sc. (Saga, Japan); Ph.D. (Kagoshima, Japan)	Senior Lecturer	Biology	Entomology. Development of resistance in Biological systems	ayoade@run.edu.ng
7	Samson Arekete	B.Tech., M.Techsc, Ph.D. (FUTA)	Senior Lecturer	Computer Science	Mobile Agent and Artificial Intelligence	areketes@run.edu.ng
8	S. Alayande	BSc, MSc. Ph.D	Senior Lecturer	Statistics	Econometrics	alayandes@run.edu.ng
9	E.U. Durugbo	B.Sc. (ASU, Uturu); M.Sc., Ph.D. (Unilag)	Senior Lecturer	Plant Biology	Palynology/Medicinal plants/Ethnobotany	durugboe@run.edu.ng
10	A. Adewuyi	BSc, MSc, PhD	Senior Lecturer	Biochemistry	Food Chemistry	adewuyia@run.edu.ng
11	A. Ogunlaja (Mrs)	B.Sc. (AAU, Ekpoma); M.Sc. Ph.D. (UI)	Senior Lecturer	Microbiology	Environmental impact assessment, Bioremediation of polluted waters	ogunlajaa@run.edu.ng
12	D. Okewole (Mrs)	B.Sc., M.Sc., PhD	Lecturer I	Statistics	Statistical Modelling	okewoled@run.edu.ng
13	C. A. Ugwu	DVM (Ibadan); M.Sc. (Oxford), PhD (Cambridge)	Lecturer I	Vet Medicine and Immunology	Zoonotic Infection	ugwuc@run.edu.ng
14	K. Akano	B.Sc. (LAUTECH), M.Sc., PhD (Ibadan)	Lecturer I	Biochemistry and Pharmacology	Antimicrobial Chemotherapy	akanok@run.edu.ng
16	U. D Abazuh	B.Sc., M.Sc., Ph.D. (Unilag)	Assistant lecturer	Cell Biology	Genomics of disease resistant genes/genetic engineering	abazuhu@run.edu.ng
17	G. O. Atilola	B.Sc. (RUN), M.Sc. (South Africa), Ph.D. (In progress)	Assistant lecturer	Epidemiology	Molecular biology, Epidemiology and genomics of HIV type I	atilolag@run.edu.ng

18	T. Kayode	B.Sc. (RUN), M.Sc. (India), Ph.D. (In progress)	Assistant lecturer	Molecular Biology	Molecular Biology, Genomics of infectious diseases, Antimicrobial resistance	kayodet@run.edu.ng
19	O. Adewale-Fasoro	B.Sc. (RUN), M.Sc. (In progress),	Graduate Assistant	Molecular Biology	Malaria Genomics	fasoroo@run.edu.ng

***ACEGID - African Centre of Excellence for the Genomics of Infectious Diseases**

3.2 Technical Staff

S/N	NAME	QULIFICATION	POSITION	E-MAIL
1	S.O. Fayemi	PGD (Food and Industrial Microbiology); HND (Microbiology)	Assistant Chief Laboratory Technologist	fayemis@run.edu.ng
2	Nosamiefan I	B.Sc. (Biomedical Engineer)	Instrument Engineer	nosamiefani@run.edu.ng
3	Eromon P.E	B.Sc.	Laboratory Manager	eromonp@run.edu.ng
4	T. A Adebayo	OND, HND	Instrument Technologist	adebayot@run.edu.ng
5	F.A. Daramola	B. Ed. Science Education	Senior Laboratory Assistant	daramolaf@run.edu.ng
6	Aderibigbe I. A.	OND	Animal House Attendant	aderibigbei@run.edu.ng

3.3 Administrative Staff

	NAME	QUALIFICATION	POSITION
1	Amao A	MPH	Project Manager
2	Mrs Olubukola Ayo-Ale	B,Sc	Administrative staff
3	Afolabi A.D.	B.SC. (Ed) Secretariat Admin)	Personal Secretary II
4	Daramola E. T.	B.Sc. (Accounting)	Assistant Chief Clerical Officer

4.0 POSTGRADUATE PROGRAMMES IN MBG

The postgraduate programme in Molecular Biology and Genomics are Master's (M.Sc.) degree and doctor of philosophy (PhD.) degree.

4.1 Domain of the Program

The postgraduate programme in Molecular Biology and Genomics shall be domiciled in the Department of Biological Sciences of the university

4.2 Admission Requirements

Master of Science (M.Sc.) Degree Programme:

The criteria for admission into the Master's program will be as follows:

- i) Candidates must have had five (5) credit passes including English, Mathematics, Biology and any two subjects of relevance at 'O' Level in one sitting and six (6) credit passes at 'O' Level in not more than two (2) sittings.
- ii) Candidates with Bachelor's degrees in Microbiology, Molecular Biology/Genetics, Biochemistry, Zoology and other related life and health science disciplines from the Redeemer's University or any university approved by the Senate of the University and a minimum of second-class lower division are eligible to apply.
- iii) Candidates with HND (Upper Credit) and university PGD with CGPA of 3.0/5.0 may be considered for admission.
- iv) Candidate must score minimum of 10points based on academic qualifications, reference reports and transcript assessment before shortlisting for validity interview.
- v) Candidate must undergo validity interview with the faculties of the program to assess student fitness for the intended program, knowledge of the applied program and skills, communication ability, interest, motivation and leadership capability (Appendix 2)

Doctor of Philosophy (PhD) Degree Programme:

The criteria for admission into the PhD degree programme will be as follows:

- i) Candidates must have had five (5) credit passes including English, Mathematics, Biology and any two subjects of relevance at 'O' Level in one sitting and six (6) credit passes at 'O' Level in not more than two (2) sittings.
- ii) Candidates with Bachelor's degrees from the Redeemer's University or any university approved by the Senate of the University and a minimum of second-class lower division with a CGPA of 3.0/5.0 are eligible to apply
- iii) Candidates must have academic Master's degree in Microbiology, Molecular Biology/Genetics, Biochemistry, Zoology and other related life science disciplines with a CGPA 4.0/5.0 and dissertation score not lower than 60%.
- iv) Candidates must demonstrate adequate intellectual capacity, maturity and effective decision making and problem-solving potentials.
- v) Candidate must score minimum of 15points based on academic qualifications, reference reports and transcript assessment before shortlisting for validity interview.
- vi) Candidate must undergo validity interview with the faculties of the program to assess student fitness for the intended program, knowledge of the applied program and skills, communication ability, interest, motivation and leadership capability.

4.3 Areas of Specialization

The postgraduate programme in molecular biology and genomics is developed specifically for infectious diseases of public health importance either in man or animals especially in Africa.

4.4. Postgraduate programmes Coordinators

-M.Sc programme Coordinator: Dr. Chinedu Ugwu, E-mail: ugwuc@run.edu.ng;

Contact: (234) 812 900 2406

-PhD Programme Coordinator: Dr. Onikepe Folarin, E-Mail: folarino@run.edu.ng;

Contact: (234) 803 565 9134

-College of Natural Sciences PG Coordinator: Prof U. Vincent, E-Mail: vincentu@run.edu.ng;

Contact: (234) 813 670 7090

4.5 Pre-reading

You have been sent a list of recommended pre-reading (please let us know if you have not received this). **It is very important that you undertake the suggested reading before you arrive in Redeemers University.** Due to the diverse background of our prospective students, we have found in the past that students who have not done enough reading to cover these topics struggle for several weeks. Also, all students should ensure their basic sciences (Biology, Microbiology, Biochemistry, Immunology) are up-to-date. This applies particularly to those from a medical background, or to anyone who completed their basic sciences more than a few years ago.

4.6 Duration of Programme

The postgraduate degree programme in Molecular Biology and Genomics shall be a research and full-time program, thus candidates are expected to be full time resident students

i) Master of Science (M.Sc.) Degree Programme

The academic programme for Master's degree in molecular biology and genomics shall run for a minimum of 4 semesters and a maximum of 6 semesters. The program shall include course work in two semesters, Internship and research period in the last two semesters.

For extension beyond the specified maximum period a special permission of the Senate shall be required.

ii) Doctor of Philosophy (PhD.) Degree Programme

Doctoral programme shall run for a minimum of 6 semesters and maximum of 8 semesters. The program shall be a full-time research program. Candidates may have to undergo certain course work in the first year of registration into the study if his/her M.Sc. degree was obtained from another university.

For extension beyond the specified maximum period a special permission of the senate shall be required through the College of Postgraduate studies.

Chart showing summary of the Academic program for Master's degree

Semesters	Year 1												Year 2												
	Course work												Internship				Research Project								
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Registration/Orientation																									
1 st Semester																									
2 nd Semester																									
Mid-session Break																									
3 rd Semester																									
4 th Semester																									
Project Research Defense																									
Consideration of Results																									
Graduation																									

Expected Academic calendar for Master's degree program

Weeks of Semester	First Semester	Second Semester	Third Semester	Fourth Semester
0	Registration/Orientation	Registration		Research Project
1-12	Lectures & Practical Sessions	Lectures & Practical sessions	Internship	
13	Revision	Revision	Submission of Internship report	
14-15	Examination	Examination		
16-24				
25 -26				Final Writing up
27				Seminar Presentation
28				Final Viva Voce Project Examination

Milestones for Doctoral Students in Molecular Biology and Genomics Program

Year	Semester	Milestone	Mode of Assessment
1	1 st and 2 nd Semester	Course work (Min of 12credit Unit)	Seminar Presentation, Term Paper, Continuous Assessment General Examination
	1 st Semester	Proposal Presentation	Seminar Presentation
	2 nd Semester	Literature Review	Seminar Presentation
	2 nd Semester	Progress Report	Presentation to Thesis Advisory Committee
2	1 st and 2 nd Semester	Laboratory Research	Progress Report
	2 nd semester	Manuscript preparation	Presentation of 1 st and 2 nd draft to supervisor
	2 nd Semester	Progress Report	Presentation to Thesis Advisory Committee
3	1 st Semester	Submission of 1 st Manuscript for Peer Review	
	1 st Semester	Preparation of 2 nd Manuscript	Presentation of 1 st and 2 nd draft to supervisor
	1 st Semester	Thesis Write up	Submission of 1 st and 2 nd draft of thesis
	1 st Semester	Progress Report	Presentation to Thesis Advisory Committee
	2 nd Semester	Submission of thesis	Final Approval of thesis by Supervisor
	2 nd Semester	Final Presentation of Research Project	Seminar Presentation
	2 nd Semester	Viva Voce Examination	External oral examination

4.7 Academic regulations

- i) **Academics Session:** An academic session consists of two semesters. Each semester normally comprises 15 weeks of teaching including two weeks for examinations.
- ii) **Modular System:** All postgraduate programme shall be run on a modularized system, commonly referred to as Course Unit System. All courses should therefore be sub-divided into more or less sufficient and logically consistent packages that are taught within a semester and examined at the end of that particular semester. Credit Units should be attached to each course.
- iii) **Definition of Credit Unit:** Credit units are weights attached to a score. One credit unit is equivalent to one hour of lecture per week per semester of 15 weeks of lectures and tutorials.

4.8 Academic Planning

4.8.1 Semester 1 and 2: Lectures and Course Work

Both semester focuses on basic scientific concept in molecular biology and genomics. Different topics on molecular biology, Cell Biology, Genomics, Immunology, and advanced courses in Microbiology and Public health are offered in these semesters. Also, research techniques, ethics and biosafety measures are offered. Foundational training courses are offered and are staggered across the two semesters. Throughout the two semesters, students are attached to various projects at the centre where they overshadow experience lab managers, postdoctoral fellows and Senior Research Scientists in undertaking ongoing research projects in the centre. This enables the students acquire hands on experience prior to beginning their own independent project.

These semesters provide the requisite knowledge and skills that will enable the students undertake research projects in molecular biology and genomics of infectious of disease.

i) Teaching and learning

The two semesters cover the taught part of the course. Teaching is delivered as series of lectures, tutorials, journal clubs, laboratory meetings and group presentation all of which are compulsory.

Class based lectures are normally three days of the week, journal takes up a day and group presentation is bi weekly. Tutorials is student led, informal and very interactive.

The aim of the lectures is to provide core knowledge and conceptual understanding, as well as to encourage discussion. Lectures are normally 50-60 minutes each, with additional time (up to 30 minutes) allocated for further discussion. All lecturers welcome questions, and the interactive sessions (tutorials) are probably the most fun – so be prepared to join in informal debate and do not be afraid to ask (and to keep on asking) until a concept (or its limitations) is entirely clear to you.

After the lectures, the presentations are uploaded onto the centre website. You should use this facility to help you in your self- and class-directed study sessions, and to expand your ‘core knowledge’ to ‘extended knowledge’. Ensure that you cover the whole syllabus, even if a topic is not actually included in the lecture material. The syllabus will be available on the website.

ii) Hands on Overshadow scheme

Students are required to volunteer two (2) contact hours in a week to overshadow our experience lab managers, technicians, postdoctoral fellows and senior research scientists, in various ongoing projects in the centre. Students will be assigned to a particular project agreed with programme director and the lab manager.

This hands-on experience will equip the students with the necessary skills to undertake an independent project.

4.8.2 Semester 3

Internship

Students will go through a 6- 12 weeks internship in other relevant laboratories, fields, or industries in order to gain insight into their areas of interest. During this period, students will spend time at the different units in order to get acquainted with various genomic tools available in the laboratory and the industries. In addition, students will gain practical experience in the variety of technology being deployed and learn about different scientific questions being investigated within the infectious disease study. At the end of the internship, each student will be required to present a written report demonstrating good understanding

of application of molecular biology and genomics knowledge and tools in the lab and the industries.

4.8.3 Semester 4

Research Project (Master's Program)

Master's program students are integrated directly into any ongoing research project where in most cases they fulfill between 1 or 2 objectives of the research projects. The research projects will include comprehensive literature review, approach to solutions, methodology, biostatistics and expected outcome. The project will be presented orally to the College before submission for evaluation.

Research project (Doctoral Program)

Students will develop and write research proposals with a focus on addressing specific, human and/or animal, local or global, serious infectious diseases including emerging and re-emerging infections. The proposal will include long and short-term goals, hypothesis, specific aims, comprehensive literature review, approach to solutions, methodology, biostatistics and expected outcome. The project will be presented orally to the College before submission for evaluation.

4.9 Project Advisors

Your project will be supervised either by one advisor (for MSc. students), two or more joint advisors who constitute your thesis advisory committee (TAC) [for PhD. students], particularly where projects draw upon expertise in more than one area. Your advisor (s) will be your main source of information and advice throughout your research project. Your advisor (s) will have the following responsibilities towards you and your project:

- Planning the framework of your research
- Advising you about relevant lectures and laboratory meetings
- Informing you of skills-training courses, including research techniques
- Advising you about literature sources
- Meeting regularly with you to discuss your work
- Reading and commenting on an initial draft of your research dissertation
- Keeping you informed as to your progress

The progress of your project is continually assessed by your advisor (for MSc. students) or the TAC. Examples of past dissertations will be made available, and other help can be provided, during the third term. The criteria for marking this assessment will be available on the website.

Your dissertation should be no more than 10,000 words and must be submitted at the recommended date.

Research Dissertation

Two weeks are set aside after the end of your research project for you to complete your dissertation. You should make sure that your advisor(s) is/are available to read a first draft at least one month before the submission date.

4.10 Requirement for Graduation

i) Master of Science (M.Sc.) Degree Programme

To be awarded a Master's degree in Molecular Biology and Genomics, candidate must pass a minimum of 36 credit units in addition to all the modules of the foundation course as designed by the College of Postgraduate Studies. The credit units are made up of the following:

- Core courses of 30 credit units, including the general courses, seminar and research project
- Elective courses of 6 credit units
- A student shall review and present at least one seminar in the area of genomics and infectious diseases.
- A student shall undergo a 6-weeks – 3months internship in a relevant organization to the field of study
- A student shall submit and defend a dissertation
- A student shall carry out research in a relevant area of infectious diseases, submit an acceptable dissertation (6 credit units and compulsory) and defend before a panel of external and internal examiners.
- A student shall have at least one draft manuscript ready for submission or already submitted for publication in a reputable journal.

ii) **Doctorate (PhD) Degree Programme**

Doctorate (PhD.) programme in Molecular Biology and Genomics shall be primarily by research. However, the Departmental Postgraduate Committee may prescribe some courses of not more than 12 credit units to be taken by the candidates. The students must also complete all the modules of the foundational course. In addition;

- A student shall review and present a seminar on current trend in genomics and or infectious diseases
- A student shall submit and defend a thesis proposal.
- Student shall present seminars on progress done on thesis at least once in a session.
- A student shall undergo a 6-week internship in a relevant organization to the field of study
- A student shall carry out research in relevant areas of infectious disease of importance to Africa and submit an acceptable thesis
- At least two peer-reviewed published articles or accepted manuscripts must be available before the thesis examination

5.0 ACADEMIC STANDARDS

5.1 Programme Requirement

Registration Procedure: Students shall normally complete registration for courses for the semester not later than two weeks into the semester. A student may not withdraw from a course after five weeks of lectures in a given semester without permission from the Dean of Postgraduate studies.

A student who withdraws after this time or who fails to seek for permission from the Dean shall be deemed to have failed that course.

A student who failed to sit for more than two courses at the end of a given semester shall be deemed to have withdrawn voluntarily from the programme.

Good Standing: To be in good standing, a student must, in each semester, have a weighted average of 50%.

Withdrawal: Candidates with weighted average less than 50% shall remain in the program for the first semester but shall be withdrawn if he/she fails to attain a weighted average of 50% at the end of the second semester.

Attendance: In order to be eligible for examination in a particular course, a student shall have attended a minimum of 70% of the total periods of formal instructions delivered for the course.

5.2 Course Evaluation

In the postgraduate programme, assessment of student's achievements shall be based on:

- i) Continuous Assessment
- ii) Course Examination
- iii) Term papers/Seminars
- iv) Other assignments as may be deemed necessary
- v) Six weeks intern in a relevant laboratory/organisation
- vi) Projects

Continuous Assessment

Continuous assessment shall be done through essays, tests, term papers, tutorial exercises, quizzes, small laboratory projects and homework/opened books assignments.

Continuous assignments are to test the student's core knowledge and understanding prior to the semester examination. It enables the teacher and the students to measure the level of understanding of the course, identify the areas of strength and weakness and work towards improvement prior to the examination. This text is normally undertaken mid semester or just at the end of the course but must be before examination. Scores from continuous assessment shall be 30% of the final marks.

Seminar Presentation: Every student must present seminar on a topic of interest with relevance to the degree programme. In addition to the presentation, the student must write up an essay on the same topic and submit for grading. The essay and presentation is to test the student ability to collect and interpret the relevant literature critically and draw a logical conclusion. The presentation therefore accesses the communication skills of the student.

Research project presentation: A research project presentation must be done to the class and faculty members of the college of Post graduate studies by students before the final submission of the dissertation.

Examinations

- i) In addition to continuous assessment, final examinations shall be given for every course at the end of every semester. The total scores obtainable for every course including continuous assessment and final examination shall be 100%.
- ii) Each course shall normally be completed and examined at the end of the semester in which it is offered.
- iii) The minimum pass mark in any course shall be 50% and above 50% shows the student has certified the requirement for basic knowledge of the course.
- iv) This measures the student's core knowledge of the courses.

5.3 Thesis Advisory Committee (TAC)

Each postgraduate student shall be assigned to thesis advisory committee (TAC). The TAC member shall be a two (2) and a maximum of four (4) for Master's and Doctoral degree programmes respectively.

The TAC for Master's degree student shall be made up of

- i. The Head of Department (Chairperson)
- ii. A main Thesis Advisor
- iii. A Co-advisor(s) (optional)
- iv. One academic member from the College of Natural Sciences
- v. The departmental Postgraduate/programme coordinator

The TAC member for Doctoral degree student shall be made up of

- i. The Head of Department (Chairperson)
- ii. A main thesis Advisor
- iii. Thesis co-advisor (s) (maximum of 3)
- iv. One academic member of the College of Natural Sciences
- v. Academic member from a relevant department in the University or other institutions within or outside Nigeria as recommended by the College of Postgraduate Studies
- vi. The departmental postgraduate/programme coordinator.

5.4 External Examination System

The external examination system shall be used at the end of the Master's and Doctoral degree programmes to assess the projects.

The dissertation for Masters shall be defended orally before a panel of internal and external examiners. The candidate during this oral examination is expected to demonstrate evidence of the work done with pertinent knowledge of the subject matter. All these should be graded.

The PhD degree shall be awarded upon successful defense of thesis which includes an oral presentation of original, creative and scientific investigations and a written thesis which is expected to include at least a published article and manuscript submitted or in preparation.

5.5 Grading Procedure

Grading of courses shall be done by a combination of percentage marks and letter grades translated into a graduated system of Weighted Average (WA). For the purpose of determining a student's standing at the end of every semester, the Weighted Average (WA) system shall be used. The WA is computed by dividing the total credit points (TCP) by the total number of units registered (TNUR) of all the courses taken in the semester. The credit point for a course is computed by multiplying the number of units for the course by the marks scored in the course

Each course shall be graded out of a maximum of 100 marks and assigned appropriate grade point equivalent in the table below.

Examination results shall be recorded as percentage marks

Score	Grade	Performance
70 – 100	A	Excellent
60 – 69	B	Very Good
50 – 59	C	Good
0 -49	F	Fail

Based on overall performance at the end of the Master's program, a candidate's performance is rated and awarded the class as follows

Weighted Average	Class of Award
60 – 100	Proceed to PhD.
55 – 59	M.Phil
50 – 54	M.Sc. Terminal
<50	Fail

6.0 PROGRAMMES

6.1 General Courses

All Masters and Doctoral degree students must take postgraduate foundation courses, Management & Entrepreneurship course, ICT & Research Methodology course as compulsory courses. However, any student who has taken them at a particular postgraduate level in the university is exempted at higher levels. The postgraduate foundational course module must be completed and passed but does not carry any credit unit.

6.2 Postgraduate Foundation Courses

This will be in 5 modules and will be taught by faculties with expertise in such areas. The assessment shall be in written or practical forms depending on the module.

Module 1: Critical Reading and Thinking

This module shall cover areas such as general understanding of the article, evaluation of the genesis of study, evaluation of evidence presented, identification of research gap in write-up, identification of methods and tools used and evaluation of the research future

Learning outcome: Student shall be able to interpret the relevant literature critically, order the argument in a logical manner, analyse the scientific method comparing with others, and identify research gaps.

Evaluation Method: Students shall evaluate an article of interest apply knowledge gained to an article of interest and make a presentation.

Module 2: Thesis Writing and Academic Ethics

This module shall include thesis writing skills, components of academic thesis, ethical standards of research, Copyright issues, Plagiarism, Referencing, referencing styles and Referencing tools, Internet search engine tools and Libraries.

Learning outcome: Student shall be able to write their thesis in right style and university format. Student shall also learn the implications of plagiarism and other false documentation

Evaluation Method: Students shall present an outline of research proposal and thesis based on the university recommended format.

Module 3: Proposal writing

This module includes topics such as: Types of proposals, Preparation towards writing a proposal, Writing skills, Components of research proposals.

Learning outcome: Student shall be able to develop a proposal ensuring the inclusion of all necessary parameters.

Evaluation Method: Students shall develop research proposal and present to the academic community.

Module 4: Research ethics

This module shall include Fundamental Ethical Principles, design and implementation of research involving human and animal experimentation, structure, role and responsibilities of the institutional review board (IRB), scientific misconduct and regulation of research, ethical clearance and informed consent and its components.

Learning outcome: Student shall understand the right way of carrying out research, the ethical issues that concern research especially when it involves human subject

Evaluation Method: Students shall undergo a certified online assessment. Student shall develop a protocol and consent/assent form relevant to research project to be submitted to the ethics committee for approval

Module 5: Leadership, Communication skills, Reporting and Conducts.

This module shall include mastery in teamwork and team building, understanding the audience, building networks and managing information flow, proposal writing, pre and post award management, contract and sub-contracts, protocol writing, amendments and submission.

Learning outcome: Student shall understand the styles of communicating and means of demonstrating leadership.

Evaluation Method: Students shall be made to make a presentation to the class.

6.3 List of Courses

FIRST SEMESTER

CORE COURSES						
S/N	COURSE CODE	COURSE TITLE	UNIT	Contact Hours	Practical Hours	ECTS Equivalent (Cr)
1	SCI 801	ICT & Research Methodology	2	50	Nil	2
2	STA 801	Statistical Methods for the Sciences	2	50	Nil	2
3	MBG 801	Advanced Cell & Molecular Biology	2	50	50	4
4	MBG 803	Functional and Comparative Genomics	2	50	Nil	2
5	MBG 807	Experimental Techniques in Molecular Biology & Genomics	2	50	50	4
6	MBG 809	Bioethics and Biosafety	2	50	Nil	2
7	MBG 821	Research Seminar	2	50		2
		Foundation Training		50		2
		Student Tutorials		50		2
TOTAL			14			22

LECTIVE COURSES

N	COURSE CODE	COURSE TITLE	UNIT S	Contact Hours	Practical Hours	
	MBG 811	Advanced Tropical Parasitology	2	50	50	4
	MBG 813	Systematic Biology	2	50	Nil	2
	MBG 815	Advanced Bacteriology	2	50	50	4
	MBG 817	Advanced Virology	2	50	50	4

SECOND SEMESTER

CORE COURSES						
S/N	COURSE CODE	COURSE TITLE	UNIT	Contact Hours	Practical Hours	ECTS Equivalent (Cr)
1	SCI 802	Management & Entrepreneurship	2	50	Nil	2
2	MBG 802	Molecular and Genomic Evolution	2	50	Nil	2
3	MBG 804	Immunology and Immunogenetics	2	50	50	4
4	MBG 806	Computational Biology	2	50	50	4
5	MBG 810	Advanced Genetics	2	50	50	4
		Foundation Training		50		2
		Student led tutorials Tutorials		50		2
TOTAL			16			20

ELECTIVE COURSES

S/N	COURSE CODE	COURSE TITLE	UNIT S	Contact Hours	Practical Hours	ECTS Equivalent (Cr)
1	MBG 808	Molecular Pharmacology and Pharmacogenomics	2	50	50	4
2	MBG 812	Antimicrobial agents and chemotherapy	2	50	50	4
3	MBG 814	Advanced Public Health Microbiology & Infectious Disease	2	50	Nil	2
5	MBG 816	Advanced Microbial Biology and Genetics	2	50	50	4

Third Semester

CORE COURSES						
S/N	COURSE CODE	COURSE TITLE	UNIT	Contact Hours	ECTS Equivalent (Cr)	
1	MBG 822	Internship	6	450	18	

Fourth SEMESTER

CORE COURSES						
S/N	COURSE CODE	COURSE TITLE	UNIT	Contact Hours	ECTS Equivalent (Cr)	
1	MBG 822	Research Project	6	450	18	

6.4 Course Synopsis/Description

SCI 801/901 ICT and Research Methodology (2 Credit Units)

This course shall cover essentials of Spreadsheets, Internet Technology, Statistical Packages, Precision and Accuracy of Estimates, Principles of Scientific Research, Concepts of Hypotheses Formulation and Testing, Organization of Research and Report writing.

Learning Outcome: Students should be able to have understanding of the IT tools and relevance to study. Students are expected to learn the different methods for research

Assessment Methods: Seminar presentation, Term paper, General Examination

Literature Reference:

SCI 802 Management and Entrepreneurship (2 Credit Units)

The course will cover business environment, general management, financial management, entrepreneurship development, feasibility studies, marketing and managerial problem solving.

Learning Outcome: Students are expected to learn business ideas and parameters to consider when industry becomes an option.

Assessment Methods: Seminar presentation, Term paper, General Examination

Literature Reference:

STA 801/901 Statistical Methods for the Sciences (2 Credit Units)

Statistical Data and methods of data description; Probability distributions; Estimation and tests of hypotheses; Regression and correlation; Correlation analysis; Contingency data analysis; Design of experiments basic concepts; Basic sampling concepts and bio-assays.

Learning Outcome: At the end of the course students take home should be to understand all possible statistical tools and their application

Assessment Methods: Seminar presentation, Term paper, General Examination

Literature Reference: High Yield Biostatistics, Epidemiology and Public Health (Fourth Edition) by Anthony N. Glaser. Publisher: Wolters Kluwer/Lippincott Williams and Wilkins

MBG 801 Advanced Cell and Molecular Biology (2 Credit Units)

Function of cellular macromolecules and macromolecular complexes in DNA replication, recombination, transposition and repair, gene expression and its regulation, mRNA splicing, non-coding RNAs, signal transduction, protein synthesis, folding and degradation, growth control, and other life processes; Cell surface receptor-mediated signal transduction, nuclear receptor signaling, mitochondria and apoptosis and DNA damage response and cell cycle checkpoints.

Learning Outcome: On completion of the course students should have an understanding of cell biology mechanisms on a molecular level, and of the regulation of such mechanisms.

Assessment Methods: Seminar presentation, Term paper, Practical session, General Examination

Literature Reference: Molecular cell biology. *Lodish, Harvey F.* 7th ed., International ed.: New York: W.H. Freeman, 2012

MBG 802 Molecular and Genomic Evolution (2 Credit Units)

Molecular variation and divergence and genome organization. evolutionary assembly of genes, the origin of novel gene function, the population genetics of repetitive DNA variation, and the evolution of multigene families. Genome organization, Comparative genomics, evolution of duplicate genes, evolution of genome structure and organization, evolution of protein-protein interaction network, and evolution of gene expression. It will also review methods for computational data analyses.

Learning Outcome: Student should be able to describe evolutionary processes that give rise to variation in sequences and genomes and how these influences the architecture of the genome, contents and variation in base composition. Explain and justify different models for sequence and genome evolution.

Assessment Methods: Seminar presentation, Term paper, General Examination

Literature Reference: Molecular and Genome Evolution. Dan Graur

MBG 803 Functional and Comparative Genomics (2 Credit Units)

Gene discovery, gene expression array; Genome sequencing; Genomic screens; Proteomics; Methodology of experimental genomics; Applications of genomics

Learning Outcome: Upon completion of this course, students are able to describe the patterns of inheritance and explain the principles. Students should be able to select the comparative –omics as a tool to gain knowledge in functional genetics and genomics and describe the gene regulations in prokaryotic and eukaryotic systems

Assessment Methods: Seminar presentation, Term paper, General Examination

Literature Reference: Comparative Genomics by Ross Hardison 2003

MBG 804 Immunology, Immunochemistry and Immunogenetics (2 Credit Units)

Principles of Immunology; Comparative immunology; Immune response against infectious diseases; Disease pathogenesis and host response; Pathogen regulation of host immune responses; Pathogen evasion of immune effector mechanisms; Polarization of CD4+ T helper cell subsets and relationship to disease outcome; Resistance to HIV; HIV and co-infection; Immunochemistry; Immunotherapies and Immunodiagnostics; Principles of vaccine design and development.

Learning Outcome: Students are expected to understand how the immune system respond to presence of pathogens. In addition, students know and understand techniques in immunology and their applications

Assessment Methods: Seminar presentation, Term paper, Practical sessions, General Examination

Literature Reference: Janeway Immunobiology

MBG 806 Computational Biology (2 Credit Units)

Introduction and advantages of computational biology and bioinformatics; Sequence alignment, characterization of functional and structural domains in DNA sequence; Prediction and determination of genes; Genome sequence analysis and assembly, extracting, manipulating and visualizing genetic and molecular data; Analysis of macromolecular

sequences; Generating and visualizing phylogenetic data; Application of genomic database in infectious disease.

Learning Outcome: On the completion of this course students shall have knowledge to identify, adapt and develop in silico models appropriate to the specific study of different biological projects. Students will also be familiar with the use of bioinformatics software, tools in their area of research.

Assessment Methods: Seminar presentation, Term paper, Practical sessions, General Examination

Literature Reference: 1) Bioinformatics: Sequence and Genome Analysis. David W Mount, 2nd Edition, Cold Spring Harbor Press. 2) Introduction to Bioinformatics Teresa Attwood, Parry-Smith David J. Publisher: Pearson Education (Singapore) Pte.Ltd. 2001.

MBG 807 Research Techniques in Molecular Biology and Genomics (2 Credit Units)

Good laboratory safety and regulatory issues; DNA isolation; digestion; cloning; Bacterial transformation; Evaluation of recombinant clones and plasmid isolation; Primer design; Electrophoresis; PCR; DNA barcoding and sequence annotation; Recombinant protein expression systems; Recombinant protein expression and purification techniques e.g. Column chromatography and affinity methods; Tissue culture.

Learning Outcome: Develop essential research and practical skills in the field of bio medical science. Develop essential research and practical skills in the field of biomedical science. Demonstrate an understanding of the importance of experimental design, principles technique and proficiency

Assessment Methods: Seminar presentation, Term paper, Practical sessions, General Examination

Literature Reference: DNA Science: A first course in recombinant DNA technology, David Micklos and Greg Freyer, Eds. • Molecular Biotechnology, Primrose, Ed. • Biotechnology: Demystifying the concepts, Bourgaize, Jewell, Buiser, Eds.

MBG 808 Molecular Pharmacology and Pharmacogenomics (2 Credit Units)

Biochemical and biophysical characteristics of interactions between drug molecules and those of the cell; How cells respond to hormones or pharmacologic agents; Drug receptor-effector coupling and its regulation; Antimicrobial and antineoplastic drug action, steroid and growth factor receptors, gene regulation, and identification of molecular targets for drugs; Genetics of drug metabolism and patient response; Introduction to the role of genetics/genomics in drug discovery, development, and clinical applications; The molecular targets of antiinfective drugs.

Learning Outcome: On successful completion of the course students will be able to: 1) Demonstrate fundamental knowledge of the molecular basis of responses to drugs and other therapeutics. 2) Explain the new field of precision medicine and how recent technological advances in areas such as genomics, pharmacogenomics and bioinformatics are revolutionising modern health care. 3) Discuss how modern pharmacogenomics differs from traditional pharmacogenetics and why this is important

Assessment Methods: Seminar presentation, Term paper, Practical sessions, General Examination

Literature Reference: "Basic and Clinical Pharmacology" by Katzung (13th edition, 2014) and/or Goodman and Gilman's the "Pharmacological Basis of Therapeutics" (11th edition, 2011).

MBG 809 Bioethics and Biosafety (2 Credit Units)

Ethical treatment of laboratory animals, animal care training; Human subjects (informed consent, IRB, training requirements and resources, clinical investigations, cultural issues and research trials); Conflict of interest; Conflict of commitment; Intellectual property; Scientific communication (citation, plagiarism, authorship). Biosafety and regulatory compliance; basics of a good laboratory practice (GLP); Biosafety considerations of the BSL-2 and BSL-3 laboratories; risk assessment and hazard identification of infectious agents, biosafety design criteria for facility design; Management principles and managing a laboratory; Biosafety audit; Principles of biodefence and bioterrorism

Learning Outcome: By the end of the course, students should be able to define Biosafety and bioethics in the context of modern biotechnology, demonstrate good laboratory procedures and practices, describe the standard operating procedures for biotechnology research and assign Biosafety levels, justify the design of confinement facilities at different Biosafety levels,

discuss the social and ethical issues related to plant and animal biotechnology and discuss the relevance of intellectual property rights to modern biotechnological innovations,

Assessment Methods: Seminar presentation, Term paper, General Examination

Literature Reference: Laboratory Biosafety Manuals by World Health Organisation, 2004

MBG 810 Advanced Genetics (2 Credit Units)

Principles of genetics; stem cell and differentiation chromatin and chromosome structure; Sex determination; Bacteria, viruses, animals and fungi as genetic systems; RFLP mapping. DNA and forensics. Genetic transformation and cloning of plants and animals. Recombinant DNA methodology, molecular genetics; Cellular and developmental genetics; Population genetics; Quantitative genetics; Evolutionary genetics

Learning Outcome: Students at the end of the course should be able to 1) relate and distinguish the various methods and principles of advanced genetic research, 2) explain the relationship between gene structure and function, 3) justify the selection of specific genetic approaches to investigate a specific biological question, 4) assess the relative merits of different approaches for using genetic variation to trace evolutionary relationships among living organisms

Assessment Methods: Seminar presentation, Term paper, Practical sessions, General Examination

Literature Reference: Molecular Biology. McGraw Hill

MBG 811 Advanced Parasitology (2 Credit Units)

Vector-borne and zoonotic parasitic diseases of public health importance; Epidemiology; epizootology, clinical manifestations, pathogenesis, diagnosis, treatment, transmission, medical entomology, cellular parasitology, Prevention and control of diseases of particular importance to developing countries

Learning Outcomes: At the end of this course, the student should Be 1) abreast with the current knowledge in the zoonotic protozoa, helminths and arthropods, 2) able to execute research in the parasitological field in the areas of invasion mechanisms of parasites, diagnostic and control mechanisms.

Assessment Methods: Seminar presentation, Term paper, Practical sessions, General Examination

Literature Reference: Parasitology. A conceptual Approach. Eric S.Loker and Bruce V.Hofkin. Garland Science.

MBG 812 Antimicrobial and Chemotherapy (2 Credit Units)

Chemistry of antimicrobial agents in clinical and industrial usage. Synthesis and production of antibiotics in microbial systems. Structure activity relationships. Antimicrobial therapy of infectious diseases. Mechanism of drug resistance. Drug measurement in body fluids.

Learning Outcomes: At the end of this course, the student should have good understanding of molecular basis of drug resistance, mechanism of action of antibiotics and therapeutic drug monitoring.

Assessment Methods: Seminar presentation, Term paper, Practical sessions, General Examination

Literature Reference: Antimicrobial Chemotherapy. Peter Davey, Mark Wilcox, William Irving & Guy Thwaites. Oxford University Press

MBG 813 Systematic Biology (2 Credit Units)

Science of taxonomy/systematic; its history and development, theories of biological classification and their history, taxonomic collection and the process of classification, taxonomic character, the methods of classifying (Archetypical and hierarchical), zoological/botanical nomenclature, the specie concept, the rules of zoological nomenclature, interpretation of the rules of nomenclature, the methods of reconstruction of evolutionary pattern/phylogenetic relationship and taxonomic publication.

Learning Outcomes: The goals of the course include 1) Provide an understanding of the central role that systematics plays across the biological disciplines. 2) Provide the historical and, especially, theoretical background that will facilitate understanding of controversies in systematic biology. 3) Provide the expertise and experience that will enable student to address questions in biology using modern, cutting-edge phylogenetic analyses.

Assessment Methods: Seminar presentation, Term paper, General Examination

Literature Reference: Inferring Phylogenies. Felsenstein, J. 2003. Sinauer, Sunderland, Massachusetts.

MBG 814 Advanced public Health Microbiology and Infectious Diseases (2 Credit Units)

Infectious diseases of humans and animals; Global health and threat of emerging pandemics; Factors contributing to disease emergence, transmission, geographic location; Anthropogenic factors promoting emergence and persistence of infectious diseases; Public Health surveillance. Traditional, passive, and active surveillance systems. Principles of public health; Dynamics of infectious diseases; Epidemiology of selected infectious diseases to include etiology, natural history, design and conduct of therapeutic and prevention intervention.

Learning Outcomes: On completion of this course student should be able to 1) Predict possible infectious disease aetiology using patient clinical signs and symptoms. 2) Describe how immunity and genetics influences the outcome of an infectious disease. 3) Communicate clinical findings in the language used to describe microbiology and genetics. 4) Practice effective hand hygiene and infection control.

Assessment Methods: Seminar presentation, Term paper, General Examination

Literature Reference:

MBG 815 Advanced Bacteriology (2 Credit Units)

Current concepts in the classification of bacteria, Cultural and nutritional studies. Bacterial pathogenicity and emerging diseases, Antibiotic and drug resistance, Anaerobic bacteriology. Laboratory diagnosis, Chemotherapy and clinical significance of nosocomial and anaerobic infections.

Learning Outcomes: Understand the strategies different microorganisms use to cause disease in animals and plants and techniques scientists use to study these processes

Assessment Methods: Seminar presentation, Term paper, practical sessions, General Examination

Literature Reference Molecular Genetics of Bacteria, 4th Edition by Larry Snyder et al., ASM Press, 2013.

MBG 816 Advanced Microbial Molecular Biology and Genetics (2 Credit Units)

Overview of the structure and function of nucleic acids; prokaryotic and eukaryotic gene expression and regulation. Molecular understanding of viral, bacterial and protozoal genetics,

DNA replication and recombination and characterization of recombinant DNA molecules. Genetically modified organisms, genotyping methods, High-throughput sequencing and its application to genomics and analysis of complex bacterial populations, Applications of genetic and genomic analysis methods to microbial processes, including strain construction, genome manipulation, and enhancement of gene expression.

Learning Outcomes: On successful completion of this course student should be able to 1) demonstrate understanding of genetics, metabolism and development and relate these results to current theories and models in genetics. 2) Explain and communicate to others current understanding of the roles of molecular genetics underpinning aspects of bacterial life metabolic processes and gene regulation, eukaryote genetics and gene regulation, eukaryote developmental processes and basic principles of population and quantitative genetics.

Assessment Methods: Seminar presentation, Term paper, Practical session, General Examination

Literature Reference: Principles and techniques of Biochemistry and Molecular Biology. Wilson and Walker, 2018, 8th ed, Hofmann A and Clokie, Cambridge University Press.

MBG 817 Advanced Virology (2 Credit Units)

Biochemistry of viral replication. RNA directed DNA polymerases. Site specific and general recombination in phage lambda. Assay of virus diseases. Viral interference and interferon. Tumor virology. Viral immunology and pathogenicity. Techniques in viral diagnosis. Human Immunodeficiency Virus (HIV) and AIDS. Management of viral diseases.

Learning Outcomes: Upon successful completion of this course, participants will be able to:
1. Describe the general principles governing virus structure and multiplication
2. Explain the differing strategies employed by viruses to enable their replication in host cells.
3. Discuss the means by which viruses cause cellular damage and disease.

Assessment Methods: Seminar presentation, Term paper, General Examination

Literature Reference:

MBG 821 Research Seminar (2 Credit Units)

Designed to handle critical reading of research articles in journals and the oral and visual presentation on scientific information.

Learning Outcomes: Students should be able to review and synthesize research information from different sources. Student is also expected to learn the art of science communication.

Assessment Methods: Seminar presentation for communication skills and Written essay

MBG 822 Research Project (6 Credit Units)

Students will develop and write research proposals with a focus on addressing specific, human and/or animal, local or global, serious infectious diseases including emerging and re-emerging infections. The proposal will include long and short term goals, hypothesis, specific aims, comprehensive literature review, approach to solutions, methodology, biostatistics and expected outcome. The project will be presented orally to the College before submission for evaluation.

Learning Outcomes: Students should be able to apply knowledge gained to develop and carry out a research projects in a relevant field and that contributes to knowledge

Assessment Methods: Seminar presentation, Written thesis, viva voce defence of the research project

7.0 Resources

Resource materials for students include the university Library, Tekena Tamuno Library which is equipped with books and journals (Appendix 2), virtual library with access to online resources (Appendix 3).

7.1 Feedback mechanism

You will have feedback reviews with the Course Director on your progress after each of the first two semester. These reports will be provided by both the teachers and the students and will be anonymized. This will enable the course director measure performance of the programme, areas of strength and areas that require improvement.

7.2 Career path

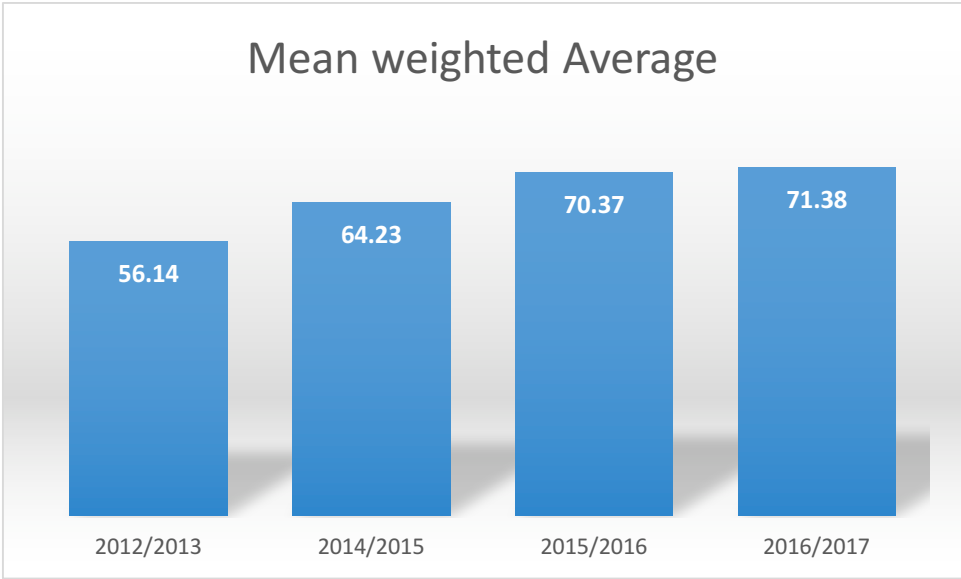
Alumni

We are delighted that over the first 6 years of the course, over half of our students have gone on to postgraduate research degrees here in Redeemer's University. Some of the graduate (30%) are applying the knowledge in hospital based institutions while the rest are back in their various academic institution and industry. We hope you will have the opportunity to meet past students, on occasions that brings the together at the University and some of them will be course mentors and graduate assistant during your academic program.

Performance indicators over the years of the Master's Degree intake and graduation

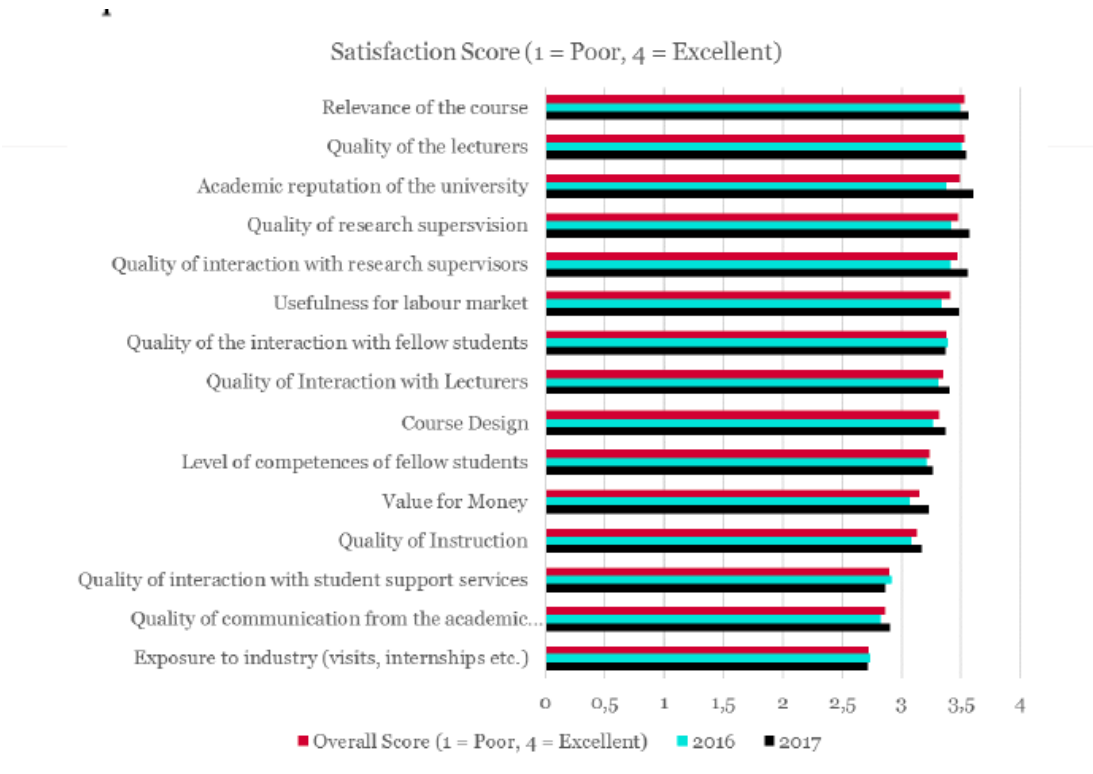
YEAR	ENROLMENT				Total	TOTAL NO. AT GRADUATION
	FULL-TIME		NATIONALITIES			
	Male	Female	Nigerian	Non-Nigerian		
2012/2013	1	1	2	-	2	2
2014/2015	3	1	4	-	4	4
2015/2016	1	3	4	-	4	4
2016/2017	4	3	6	1	7	7

At a regular period (annually), a questionnaire is sent to all the alumni to track their academic and career progress



Pattern of the mean weighted average of our graduates in the past 4 years

Outcome of Satisfaction feedback obtained from the graduate of 2016/2017 class



7.3 Academic Board of Studies

There are 3 tiers of academic board of studies for the postgraduate program that monitors the academic and non-academic activities of the program.

- i. Departmental Board of study. This constitutes of
 - The Head of Department
 - All academic lecturers of the department
 - Student Representative nominated by the student body of the department
- ii. College of Natural Sciences Board of Studies: This constitutes of
 - The Dean of the College
 - Sub dean College PG
 - All Heads of Department in the college
 - All departmental PG coordinators
 - 2 Student Representative nominated by the student body in the college
- iii College of Postgraduate studies board of Studies: This constitutes of
 - Dean of College of Post graduate studies
 - Sub dean of college of Post graduate studies
 - Dean of the other college in the University
 - All heads of Department
 - All Department PG coordinators
 - 3 student representatives (one from each college) nominated by the PG students' body in the University

7.4 Useful contacts

Prof G. A. Kolawole

Dean

College of Postgraduate Studies

E-Mail: kolawoleg@run.edu.ng

Contact: (234) 706 317 8352

Prof I.O.O. komolafe

Head of Department

Biological Science

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Contact: (234) 703 686 9868

Prof Christian Happi

Director

ACEGID

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Contact: (234) 802 338 3684

Prof U. Vincent

PG Coordinator

College of Natural Sciences

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Contact: (234) 813 670 7090

Dr. Onikepe Folarin

PG Coordinator (PhD)

Department of Biological Sciences

E-Mail: folarino@run.edu.ng

Contact: (234) 803 565 9134

Dr. Chinedu Ugwu

PG Coordinator (MSc)

Department of Biological Sciences

E-mail: ugwuc@run.edu.ng

Contact: (234) 812 900 2406

Appendix 1: Criteria for Validity Assessment Step for Admission into Master's or Doctoral Program

Appearance (Dressing, Character, Values, Maturity)

Communication Ability (Eloquence accuracy of expression)

Composure/Confidence/Attitude

Interest/Motivation/Drive/Leadership/Capability

Skills (Research, Interpersonal etc)

Response to questions

Appendix 2: List of Journals Available in Tekena Tamuno Library

BIOLOGY JOURNAL (LOCAL TITLE)

S/N	TITLE	PUBLISHER	VOLUME
1	African Sickle Cell News and World Report	Scell Media Resources	Vol. 1 No. 1 July-Sep. 2009 (2 Copies) Vol. 1 No. 2 Oct.-Dec. 2009 (2 Copies) Vol. 2 No. 1 Jan.-March. 2010 (3 Copies) Vol. 2 No. 2 April-June. 2010 (3 Copies) Vol. 2 No. 3 July-Sept. 2010 (2 Copies) Vol. 2 No. 4 Oct.-Dec. 2010 (3 Copies) Vol. 3 No. 1 Jan.-March. 2011 (3 Copies) Vol. 3 No. 2 April-June. 2011 (3 Copies) Vol. 3 No. 3 July-Sept. 2011 (2 Copies) Vol. 3 No. 4 Oct.-Dec. 2011 (2 Copies) Vol. 4 No. 1 Jan.-March. 2012 (2 Copies) Vol. 4 No. 3 July-Sept. 2012 (2 Copies) Vol. 4 No. 4 Oct.-Dec. 2012 (2 Copies) Vol. 5 No. 1 Jan.-March. 2013 (2 Copies) Vol. 5 No. 2 April-June. 2013 (2 Copies) Vol. 5 No. 3 July-Sept. 2013 (2 Copies) Vol. 5 No. 4 Oct.-Dec. 2013 (2 Copies) Vol. 6 No. 1 Jan.-March. 2014 (2 Copies) Vol. 6 No. 2 April-June. 2014 (2 Copies)

			Vol. 6 No. 3 July-Sept. 2014 (2 Copies) Vol. 6 No. 4 Oct.-Dec. 2014 (2 Copies) Vol. 7 No. 1 Jan.-March. 2015 (2 Copies) Vol. 7 No. 2 April-June. 2015 (2 Copies)
2	The Sickle Cell Journal	Scell Media Resources	Vol. 1 No. 1, Jan.-March 2008 (2 Copies) Vol. 1 No. 2, April-June. 2008 (2 Copies) Vol. 1 No. 3, July-Sept. 2008 (3 Copies) Vol. 2 No. 1, Jan.-March 2009 (2 Copies) Vol. 2 No. 2, April-June. 2009 (2 Copies)
3	Biokemistri	Klobex Academic Publishers	Vol.1,2,5,Vol.10-21,2009 Vol. 23-No.1, 2011 Vol. 23-No.3, 2011 Vol. 24-No. 1, 2012 Vol. 24-No. 2, 2012 Vol. 26 No. 1, March 2014
4	AfriNet Index	Klobex Academic Publishers	Vol.1,2,5,6,2006
5	NISEB Journal	Klobex Academic Publishers	Vol.1-4,2004
6	Bio-Science Abstracts	Klobex Academic Publishers	Vol.18-19,2009 Vol. 21- No. 3, 2011 Vol. 21, No. 5, 2011
7	ROAN: The Journal of Conservation	A-Triad Associates Publishers and Printers	Vol.1,3,2004
8	Nigerian Journal of Mycology	Mycological Society of Nigeria	Vol.2,2009
9	Kastina Journal of Pure and Applied Science	Faculty of Natural & Applied Sciences Umaru Musa Yaradua University	Vol.2,2010 Vol. 3, No. 2, March 2013
10	Bio-Research	Faculty of Biological Sciences, University of Nigeria	Vol.5-6,2008
11	Bioscience Research Journal	Klobex Academic Publishers	Vol.12-15,20-21,2009

	(Bioscience Research Communications)		Vol. 24, No. 6, Dec. 2012
12	African Scientist	Klobex Academic Publishers	Vol.1-10,2009
13	Nigerian Journal of Genetics	Genetics Society of Nigeria	Vol.3-5,20-24,2010 Vol. 27, 2013
14	Acta Satech: The Journal of Life and Physical Sciences satech	The School of Science and Technology, Babcock University	Vol.1-3,2010
15	Biological and Environmental Sciences Journal for the Tropics	Department of Biological Sciences, Faculty of Sciences ,Bayero University, Kano	Vol.1-7,2010 Vol. 8- No. 3, 2011 Vol. 9- No. 1, 2012 Vol. 9- No. 4, 2012 Vol. 10- No. 1, 2013
16	Nigeria Journal of Botany	The Botanical Society of Nigeria	Vol.9,11-22,2009 Vol. 24, No. 2, Dec. 2011
17	The Zoologist	Zoological Society of Nigeria	Vol.1,3-8,2010
18	Nigeria Journal of Biotechnology	Biotechnology Society of Nigeria	Vol.18,(1&2)2007
19	Bio-science Research Bulletin	A.K Sharma	Vol.212005
20	Nigeria Journal Parasitology	Textflow Limited	Vol.28,30,2009
21	Nigeria Journal of Microbiology	Nigeria Association For Microbiology	Vol.18-22, Vol.24, No.1,2010
22	African Journal of Clinical And Experimental Microbiology	AJCEM life line publisher	Vol.1-2,4-9,2008 Vol. 12- No. 1, 2011 Vol. 12- No. 2, 2011 Vol. 12- No. 3, 2011 Vol. 13- No. 1, 2012 Vol. 13- No. 2, 2012 Vol. 13- No. 3, 2012 Vol. 14- No. 1, 2013 Vol. 11, No. 2, May 2010
23	Nigerian Journal of Life Sciences (NJLSC)	Faculty of Life Sciences, University of Benin, Benin City, Nigeria	Vol.3 No.1, June 2013
24	Nigerian Journal of Gastroenterology and Hepatology	The Society for Gastroenterology and Hepatology in Nigeria (SOGHIN)	Vol. 5 No. 2, Dec. 2013
25	Journal of Biological Science and Bioconservation		Vol.4, 2012
26	Nigeria Journal of Microbiology	Nigeria society of microbiology	Vol.27 2015 Vol.29 2015

			Vol. 30(1) 2016 Vol. 30(2) 2016
27	Nigerian Journal of Science	Science Association of Nigeria	Vol. 50, 2016
28	Nigerian Journal of Mycology(MYCOSON)	The Official Journal of the Mycological Society of Nigeria	Vol.7, 2015 Vol.8,2016
29	Journal of Science Research	Faculty of Science, University of Ibadan	Vol.14, 2015
30	African Journal of Clinical and Experimental Microbiology	Department of Microbiology, LAUTECH Teaching Hospital , Ogbomoso	Vol.18, No.4
31	UMYU Journal of Microbiology Research (UJMR)	Faculty of Natural and Applied Sciences Umaru Musa Yar'adua University Kastina, Nigeria	Vol.2 No.1 June, 2017
32	International Journal of Applied Biological Research	Department of Biological Science, Federal University of Technology, Minna	Vol.7, No.2 December, 2016
33	Nigerian Journal of Applied Science	Nigerian Journal of Applied Science, Department of Chemistry, University of Benin	Vol.35, 2017

SUMMARY

Local titles =33 Volume = 307

BIOLOGICAL SCIENCE JOURNAL (FOREIGN TITLE)

S/N	TITLE	PUBLISHER	VOLUME
1	Trends In Biochemical Science	International Union of Biochemistry And Molecular Biology	Vol.36
2	Journal of the Marine Biological Association of the United Kingdom	Cambridge University Press	Vol.2,3,4,5,6,2006
3	Quarterly Reviews of Biophysics	Cambridge University Press	Vol.37-40,2007
4	Conservation	Cambridge University Press	Vol.35,2008
5	Plant Genetics Resources Characterization and Utilization	Cambridge University Press	Vol.6,2008
6	Oryx: The International Journal of Conservation	Cambridge University Press	Vol.39-42,2008

7	The British Journal for the History of Science	Cambridge University Press	Vol.39,2006
8	The Egyptian Journal of Genetics and Cytology	Egyptian Society of Genetics	Vol.4,1975
9	America Journal of Botany	Botanical Society of America	Vol.95-99,2012
10	Microscopy And Microanalysis Plant Science Bulletin	Cambridge University Press	Vol.12,2006
11	Plant Science Bulletin	Botanical Society of America	Vol.54-57,2011
12	Seed Science Research	Cambridge University Press	Vol.16-17,2007
13	The Lichenologist	Cambridge University Press	Vol.38,40,2008
14	Biochemical and Biophysical Research Communications	Elsevier	Vol. 401 No. 3, October 22, 2010 Vol. 401 No. 1, October 8, 2010 Vol. 400 No. 4, October 1, 2010
15	Annual Review of Microbiology	Palo Alto	Vol.54-64,2010
16	International Journal of Tropical Insect Science	Cambridge University Press	Vol.27,2007
17	Journal of Tropical Ecology	Cambridge University Press	Vol.20,2004
18	Bulletin of Entomological Research	Cambridge University Press	Vol.98,2008
19	Animal: An International Journal of Animal Bioscience	Cambridge University Press	Vol.1,2008
20	Biotechniques: the International Journal of Life Science Methods.	Life Science Publishing	Vol.42-43,46-47,2009
	Trends in Parasitology	Elsevier Ltd.	Vol.24-26,2010
21	Cell	Cell Press	Vol.3,8,127-128,131-143, 145, 2011
22	Cell Host and Microbe	Cell Press	Vol.3-8,2010
23	Nature	Nature Publishing Group	Vol.463-468,2010
24	Nature Methods	Nature Publishing Group	Vol.5,2008
25	Nature Genetics	Nature Publishing Group	Vol.39,2007
26	Microbe	American Society for Microbiology	Vol.3,4,5, 2010

27	Microbial Drug Resistance	Mary Ann Liebert, Inc Publishers	Vol.14,15,16,17,2011
28	International Journal for Parasitology	Elsevier	Vol.38,40,2010
29	The American Journal of Tropical Medical and Hygiene	The American Society of Tropical Medical and Hygiene	Vol. 57,58,60,62,63,65, 66,67,68,69,70,81,82, 2001
30	Science	American Association for the Advance of Science	Vol.310,313,315,316,323,324, 325,326,329,330,327 2010
31	Nature	Nature Publishing Group	Vol. 474, 2011
32	Parasitology International	Elsevier	Vol. 59, 2010
33	HHMI Bulletin	Howard Hughes Medical Institute	Vol.21,22,23,2010
34	TDR News	World Health Organization	No.82-83,2009,No.85-86,2010
35	Bulletin of the World Health Organization	World Health Organization	Vol.87,2009-Vol.88,2010
36	Urinary Tract Infection among Antiretroviral Therapy Users and Nonusers in Jimma University Specialized Hospital, Jimma, Ethiopia	International Journal of Microbiology, Hindawi Publishing Corporation	Vol.9 2014

SUMMARY

Foreign titles = 36 Volume = 576

BIOCHEMISTRY JOURNAL (LOCAL TITLES)

S/N	TITLE	PUBLISHER	VOLUME
1	African Sickle Cell News and World Report	Scell Media Resources	Vol. 1 No. 1 July-Sep. 2009 (2 Copies) Vol. 1 No. 2 Oct.-Dec. 2009 (2 Copies) Vol. 2 No. 1 Jan.- March. 2010 (3 Copies) Vol. 2 No. 2 April-June. 2010 (3 Copies) Vol. 2 No. 3 July-Sept. 2010 (2 Copies) Vol. 2 No. 4 Oct.-Dec. 2010 (3 Copies) Vol. 3 No. 1 Jan.- March. 2011 (3 Copies)

			<p>Vol. 3 No. 2 April-June. 2011 (3 Copies)</p> <p>Vol. 3 No. 3 July-Sept. 2011 (2 Copies)</p> <p>Vol. 3 No. 4 Oct.-Dec. 2011 (2 Copies)</p> <p>Vol. 4 No. 1 Jan.-March. 2012 (2 Copies)</p> <p>Vol. 4 No. 3 July-Sept. 2012 (2 Copies)</p> <p>Vol. 4 No. 4 Oct.-Dec. 2012 (2 Copies)</p> <p>Vol. 5 No. 1 Jan.-March. 2013 (2 Copies)</p> <p>Vol. 5 No. 2 April-June. 2013 (2 Copies)</p> <p>Vol. 5 No. 3 July-Sept. 2013 (2 Copies)</p> <p>Vol. 5 No. 4 Oct.-Dec. 2013 (2 Copies)</p> <p>Vol. 6 No. 1 Jan.-March. 2014 (2 Copies)</p> <p>Vol. 6 No. 2 April-June. 2014 (2 Copies)</p> <p>Vol. 6 No. 3 July-Sept. 2014 (2 Copies)</p> <p>Vol. 6 No. 4 Oct.-Dec. 2014 (2 Copies)</p> <p>Vol. 7 No. 1 Jan.-March. 2015 (2 Copies)</p> <p>Vol. 7 No. 2 April-June. 2015 (2 Copies)</p>
2	The Sickle Cell Journal	Scell Media Resources	<p>Vol. 1 No. 1, Jan.-March 2008 (2 Copies)</p> <p>Vol. 1 No. 2, April-June. 2008 (2 Copies)</p> <p>Vol. 1 No. 3, July-Sept. 2008 (3 Copies)</p> <p>Vol. 2 No. 1, Jan.-March 2009 (2 Copies)</p>

			Vol. 2 No. 2, April-June. 2009 (2 Copies)
3	Biokemistri	Klobex Academic Publishers	Vol.1,2,5,Vol.10-21,2009 Vol. 23-No.1, 2011 Vol. 23-No.3, 2011 Vol. 24-No. 1, 2012 Vol. 24-No. 2, 2012 Vol. 26 No. 1, March 2014
4	AfriNet Index	Klobex Academic Publishers	Vol.1,2,5,6,2006
5	NISEB Journal	Klobex Academic Publishers	Vol.1-4,2004
6	Bio-Science Abstracts	Klobex Academic Publishers	Vol.18-19,2009 Vol. 21- No. 3, 2011 Vol. 21, No. 5, 2011
7	ROAN: The Journal of Conservation	A-Triad Associates Publishers and Printers	Vol.1,3,2004
8	Nigerian Journal of Mycology	Mycological Society of Nigeria	Vol.2,2009
9	Kastina Journal of Pure and Applied Science	Faculty of Natural & Applied Sciences Umaru Musa Yaradua University	Vol.2,2010 Vol. 3, No. 2, March 2013
10	Bio-Research	Faculty of Biological Sciences, University of Nigeria	Vol.5-6,2008
11	Bioscience Research Journal (Bioscience Research Communications)	Klobex Academic Publishers	Vol.12-15,20-21,2009 Vol. 24, No. 6, Dec. 2012
12	African Scientist	Klobex Academic Publishers	Vol.1-10,2009
13	Nigerian Journal of Genetics	Genetics Society of Nigeria	Vol.3-5,20-24,2010 Vol. 27, 2013
14	Acta Satech: The Journal of Life and Physical Sciences satech	The School of Science and Technology, Babcock University	Vol.1-3,2010
15	Biological and Environmental Sciences Journal for the Tropics	Department of Biological Sciences, Faculty of Sciences ,Bayero University, Kano	Vol.1-7,2010 Vol. 8- No. 3, 2011 Vol. 9- No. 1, 2012 Vol. 9- No. 4, 2012 Vol. 10- No. 1, 2013
16	Nigeria Journal of Botany	The Botanical Society of Nigeria	Vol.9,11-22,2009 Vol. 24, No. 2, Dec. 2011
17	The Zoologist	Zoological Society of Nigeria	Vol.1,3-8,2010
18	Nigeria Journal of Biotechnology	Biotechnology Society of Nigeria	Vol.18,(1&2)2007

19	Bio-science Research Bulletin	A.K Sharma	Vol.212005
20	Nigeria Journal Parasitology	Textflow Limited	Vol.28,30,2009
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22	African Journal of Clinical And Experimental Microbiology	AJCEM life line publisher	Vol.1-2,4-9,2008 Vol. 12- No. 1, 2011 Vol. 12- No. 2, 2011 Vol. 12- No. 3, 2011 Vol. 13- No. 1, 2012 Vol. 13- No. 2, 2012 Vol. 13- No. 3, 2012 Vol. 14- No. 1, 2013 Vol. 11, No. 2, May 2010
23	Nigerian Journal of Life Sciences (NJLSC)	Faculty of Life Sciences, University of Benin, Benin City, Nigeria	Vol.3 No.1, June 2013
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25	Journal of Biological Science and Bioconservation		Vol.4, 2012
26	Nigeria Journal of Microbiology	Nigeria society of microbiology	Vol.27 2015 Vol.29 2015 Vol. 30(1) 2016 Vol. 30(2) 2016
27	Nigerian Journal of Science	Science Association of Nigeria	Vol. 50, 2016
28	Nigerian Journal of Mycology(MYCOSON)	The Official Journal of the Mycological Society of Nigeria	Vol.7, 2015 Vol.8,2016
29	Journal of Science Research	Faculty of Science, University of Ibadan	Vol.14, 2015
30	African Journal of Clinical and Experimental Microbiology	Department of Microbiology, LAUTECH Teaching Hospital , Ogbomoso	Vol.18, No.4
31	UMYU Journal of Microbiology Research (UJMR)	Faculty of Natural and Applied Sciences Umaru Musa Yar'adua University Kastina, Nigeria	Vol.2 No.1 June, 2017
32	International Journal of Applied Biological Research	Department of Biological Science, Federal University of Technology, Minna	Vol.7, No.2 December, 2016

33	Nigerian Journal of Applied Science	Nigerian Journal of Applied Science, Department of Chemistry, University of Benin	Vol.35, 2017
34	Journal of Chemical Society of Nigeria	Pure And Applied Chemistry	Vol.28. 2003 Vol.29. 2004 Vol.30. No.1, 2005 Vol.31. No.1&2, 2006 Vol.32. No.1, 2008 Vol.32. No..2, 2008 Vol.33, No.1, 2008 Vol.33. No.2, 2008 (2 Copies) Vol.34. No.1, 2009 (2 Copies) Vol.34. No.2, 2009 Vol. 35, No. 2, 2010 Vol.36, No.1, 2011 Vol.37, No.1, 2012 Vol.40, No.2, 2015 Vol. 41, No.1 & 2, 2016 Vol.42, No.1 & 2, 2017

SUMMARY

Local titles =34 Volume = 326

BIOCHEMISTRY JOURNAL (FOREIGN TITLES)

S/N	TITLE	PUBLISHER	VOLUME
1	Trends In Biochemical Science	International Union of Biochemistry And Molecular Biology	Vol.36
2	Journal of the Marine Biological Association of the United Kingdom	Cambridge University Press	Vol.2,3,4,5,6,2006
3	Quarterly Reviews of Biophysics	Cambridge University Press	Vol.37-40,2007
4	Conservation	Cambridge University Press	Vol.35,2008
5	Plant Genetics Resources Characterization and Utilization	Cambridge University Press	Vol.6,2008

6	Oryx: The International Journal of Conservation	Cambridge University Press	Vol.39-42,2008
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8	The Egyptian Journal of Genetics and Cytology	Egyptian Society of Genetics	Vol.4,1975
9	America Journal of Botany	Botanical Society of America	Vol.95-99,2012
10	Microscopy And Microanalysis Plant Science Bulletin	Cambridge University Press	Vol.12,2006
11	Plant Science Bulletin	Botanical Society of America	Vol.54-57,2011
12	Seed Science Research	Cambridge University Press	Vol.16-17,2007
13	The Lichenologist	Cambridge University Press	Vol.38,40,2008
14	Biochemical and Biophysical Research Communications	Elsevier	Vol. 401 No. 3, October 22, 2010 Vol. 401 No. 1, October 8, 2010 Vol. 400 No. 4, October 1, 2010
15	Annual Review of Microbiology	Palo Alto	Vol.54-64,2010
16	International Journal of Tropical Insect Science	Cambridge University Press	Vol.27,2007
17	Journal of Tropical Ecology	Cambridge University Press	Vol.20,2004
18	Bulletin of Entomological Research	Cambridge University Press	Vol.98,2008
19	Animal: An International Journal of Animal Bioscience	Cambridge University Press	Vol.1,2008
20	Biotechniques: the International Journal of Life Science Methods.	Life Science Publishing	Vol.42-43,46-47,2009
	Trends in Parasitology	Elsevier Ltd.	Vol.24-26,2010
21	Cell	Cell Press	Vol.3,8,127-128,131-143, 145, 2011
22	Cell Host and Microbe	Cell Press	Vol.3-8,2010

23	Nature	Nature Publishing Group	Vol.463-468,2010
24	Nature Methods	Nature Publishing Group	Vol.5,2008
25	Nature Genetics	Nature Publishing Group	Vol.39,2007
26	Microbe	American Society for Microbiology	Vol.3,4,5, 2010
27	Microbial Drug Resistance	Mary Ann Liebert, Inc Publishers	Vol.14,15,16,17,2011
28	International Journal for Parasitology	Elsevier	Vol.38,40,2010
29	The American Journal of Tropical Medical and Hygiene	The American Society of Tropical Medical and Hygiene	Vol. 57,58,60,62,63,65, 66,67,68,69,70,81,82, 2001
30	Science	American Association for the Advance of Science	Vol.310,313,315,316,323,324, 325,326,329,330,327 2010
31	Nature	Nature Publishing Group	Vol. 474, 2011
32	Parasitology International	Elsevier	Vol. 59, 2010
33	HHMI Bulletin	Howard Hughes Medical Institute	Vol.21,22,23,2010
34	TDR News	World Health Organization	No.82-83,2009,No.85-86,2010
35	Bulletin of the World Health Organization	World Health Organization	Vol.87,2009-Vol.88,2010
36	Urinary Tract Infection among Antiretroviral Therapy Users and Nonusers in Jimma University Specialized Hospital, Jimma, Ethiopia	International Journal of Microbiology, Hindawi Publishing Corporation	Vol.9 2014
37	Polymer Composite	Society of Plastics Engineers, Inc	Vol.5-7, 1986
38	The Journal of Organic Chemistry	American Chemical Society	Vol.55-65, No. 1-5, 2000
39	Langmuir	America Chemical Society	Vol.7,8, No.1-12, 1992
40	Journal of Applied Polymer Science	Inter-science publisher	Vol.14-39, 1990
41	Journal of Polymer Science: Polymer Chemistry	John Wiley And Sons	Vol.15-25,27, 1989
42	Applied Spectroscopy	Society For Applied Spectroscopy	Vol.41-47, 1996
43	Journal of The American Society For mass Spectrometry	Elsevier Science Inc	Vol.1-11, No. 1-11, 2000

44	JACS: Journal of The American Chemical Society	America Chemical Society	<p>Vol.1-50,122-134, No. 1-24, 2012</p> <p>Vol. 136, No. 1, Jan. 8, 2014.</p> <p>Vol. 136, No. 12, March 26, 2014.</p> <p>Vol. 136, No. 2, Jan. 15, 2014</p> <p>Vol. 136, No. 3, Jan. 22, 2014</p> <p>Vol. 136, No. 18, May 7, 2014</p> <p>Vol. 136, No. 19, May 14, 2014</p> <p>Vol. 136, No. 20, May 21, 2014</p> <p>Vol. 136, No. 21, May 28, 2014</p> <p>Vol. 136, No. 4, Jan. 29, 2014</p> <p>Vol. 136, No. 5, Feb. 5, 2014</p> <p>Vol. 136, No. 6, Feb. 12, 2014</p> <p>Vol. 136, No. 7, Feb. 19, 2014</p> <p>Vol. 136, No. 8, Feb. 26, 2014</p> <p>Vol. 136, No. 9, March 5, 2014</p> <p>Vol. 136, No. 10, March 12, 2014</p> <p>Vol. 136, No. 15, April 16, 2014</p> <p>Vol. 136, No. 16, April 23, 2014</p> <p>Vol. 136, No. 17, April 30, 2014</p> <p>Vol. 136, No. 11, March 19, 2014</p> <p>Vol. 136, No. 13, April 2, 2014</p> <p>Vol. 136, No. 14, April 9, 2014</p> <p>Vol. 136, No. 22, June 4, 2014</p> <p>Vol. 136, No. 23, June 11, 2014</p> <p>Vol. 136, No. 24, June 18, 2014</p> <p>Vol. 136, No. 25, June 25, 2014</p> <p>Vol. 136, No. 26, July 2, 2014</p> <p>Vol. 136, No. 27, July 9, 2014</p> <p>Vol. 136, No. 28, July 16, 2014</p> <p>Vol. 136, No. 29, July 23, 2014</p> <p>Vol. 136, No. 30, July 30, 2014</p> <p>Vol. 136, No. 31, Aug. 6, 2014</p>
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			Vol. 136, No. 32, Aug. 13, 2014
45	Analytical Chemistry	American Chemistry Society Publications	Vol.41-84, No1-24, 2012
46	ChemComm: Chemical Communications	Royal Society of Chemistry	Vol.50,No 1, 4 Jan 2014 Vol.50,No 3, 11 Jan 2014 Vol.50,No 4, 14 Jan 2014 Vol.50,No 2, 7 Jan 2014 Vol.50,No 5, 18 Jan 2014 Vol.50,No 6, 21 Jan 2014 Vol.50,No 7, 25 Jan 2014 Vol.50,No 8, 28 Jan 2014 Vol. 50,No.9, 4 Feb 2014. Vol. 50,No.10, 7 Feb 2014. Vol. 50,No.11, 9 Feb 2014. Vol. 50,No.12, 11 Feb 2014. Vol. 50,No.13, 14 Feb 2014. Vol. 50,No.13, 14 th Feb 2014. Vol. 50,No.14, 18 th Feb 2014. (2 copies) Vol. 50,No.15, 21 st Feb 2014.(2 copies) Vol. 50,No.16, 25 th Feb 2014. (2 copies) Vol.50,No.17,28 Feb 2014 Vol.50,No.18,4 March2014 Vol.50,No.19,7 March2014 Vol.50,No.20,11 March2014 Vol. 50 No.21,14 March 2014 Vol. 50,No.22, 18 March 2014 Vol. 50,No.23, 21 March 2014 Vol. 50,No.24, 25 March 2014 Vol.50,No.25, 28 April2014 Vol.50,No.26,4 April2014 Vol.50,No.27,7 April 2014 Vol.50,No.28,11 April 2014 Vol.50,No.29,14 April 2014 Vol. 50,No.30, 18 April 2014(2 copies) Vol. 50, No.31, 21 April 2014. Vol. 50, No.32, 25 th April 2014. (2 copies) Vol. 50, No.33, 28 April 2014.(2 copies) Vol. 50, No.36, 11 May 2014.(2 copies)

			<p>Vol. 50, No.37, 14 May 2014.(2 copies)</p> <p>Vol. 50, No.38, 18 May 2014.(2 Copies)</p> <p>Vol. 50, No.34, 4th May 2014.(2copies)</p> <p>Vol. 50, No.35, 7th May 2014. (2 copies)</p> <p>Vol. 50, No.39, 21 May 2014.</p> <p>Vol. 50, No. 48, 18 June 2014.</p> <p>Vol. 50, No. 49, 21 June 2014.</p> <p>Vol. 50, No. 50, 25 June 2014.</p> <p>Vol. 50 No. 40, 25 May, 2014</p> <p>Vol. 50 No. 42, 30 May, 2014</p> <p>Vol. 50 No. 43, 1 June, 2014</p> <p>Vol. 50 No. 44, 4 June, 2014</p> <p>Vol. 50 No. 45, 7 June, 2014</p> <p>Vol. 50 No. 51, 28 June, 2014</p> <p>Vol. 50 No. 52, 4 July, 2014</p> <p>Vol. 50 No. 53, 11 July, 2014</p> <p>Vol.50, No.55, 14 July, 2014</p> <p>Vol.50, No.56, 18 July, 2014</p> <p>Vol.50, No.57, 21 July, 2014</p> <p>Vol.50, No.58, 25 July, 2014</p> <p>Vol.50, No.59, 28 July, 2014</p> <p>Vol.50, No.61, 7 Aug., 2014</p> <p>Vol.50, No.52, 11 Aug., 2014</p> <p>Vol.50, No.54, 11 July., 2014</p> <p>Vol.50, No. 60, 4 Aug., 2014</p> <p>Vol.50, No. 63, 14 Aug., 2014</p> <p>Vol.50, No. 64, 18 Aug., 2014</p> <p>Vol.50, No. 65, 21 Aug., 2014</p> <p>Vol.50, No. 68, 4 Sept., 2014</p> <p>Vol.50, No. 69, 7 Sept., 2014</p> <p>Vol.50, No. 70, 11 Sept.,2014</p> <p>Vol.50, No. 71, 14 Sept., 2014</p> <p>Vol.50, No. 72, 18 Sept., 2014</p> <p>Vol.50, No. 73, 21 Sept., 2014</p>
47	Journal of Medicinal Chemistry	The American Chemical Society	<p>Vol. 57, No. 9 May 8, 2014</p> <p>Vol. 57, No. 10 May 22, 2014</p> <p>Vol. 57, No. 1, Jan 9, 2014</p> <p>Vol. 57, No. 2, Jan 23, 2014</p> <p>Vol. 57, No. 3, Feb 13, 2014</p> <p>Vol. 57, No. 4, Feb 27, 2014</p> <p>Vol. 57, No. 5, March 13, 2014</p>

			Vol. 57, No. 6, March 27, 2014 Vol. 57, No. 7, April 10, 2014 Vol. 57, No. 8, April 24, 2014 Vol. 57, No. 11, June 12, 2014 Vol. 57, No. 13, July 10, 2014 Vol. 57, No. 14, July 24, 2014 Vol. 57, No. 15, Aug. 14, 2014 Vol. 50, No. 81, Oct. 18, 2014 Vol. 50, No. 82, Oct. 21, 2014 Vol. 50, No. 83, Oct. 25, 2014 Vol. 50, No. 84, Oct. 28, 2014 Vol. 50, No. 85, Nov. 4, 2014 Vol. 50, No. 86, Nov. 7, 2014 Vol. 50, No. 87, Nov. 11, 2014 Vol. 50, No. 88, Nov. 14, 2014 Vol. 50, No. 89, Nov. 18, 2014
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SUMMARY

Foreign titles = 47 Volume = 576

MOLECULAR BIOLOGY JOURNAL (LOCAL TITLE)

S/N	TITLE	PUBLISHER	VOLUME
1	African Sickle Cell News and World Report	Scell Media Resources	Vol. 1 No. 1 July-Sep. 2009 (2 Copies) Vol. 1 No. 2 Oct.-Dec. 2009 (2 Copies) Vol. 2 No. 1 Jan.-March. 2010 (3 Copies) Vol. 2 No. 2 April-June. 2010 (3 Copies) Vol. 2 No. 3 July-Sept. 2010 (2 Copies) Vol. 2 No. 4 Oct.-Dec. 2010 (3 Copies) Vol. 3 No. 1 Jan.-March. 2011 (3 Copies) Vol. 3 No. 2 April-June. 2011 (3 Copies) Vol. 3 No. 3 July-Sept. 2011 (2 Copies) Vol. 3 No. 4 Oct.-Dec. 2011 (2 Copies)

			<p>Vol. 4 No. 1 Jan.- March. 2012 (2 Copies)</p> <p>Vol. 4 No. 3 July- Sept. 2012 (2 Copies)</p> <p>Vol. 4 No. 4 Oct.-Dec. 2012 (2 Copies)</p> <p>Vol. 5 No. 1 Jan.- March. 2013 (2 Copies)</p> <p>Vol. 5 No. 2 April- June. 2013 (2 Copies)</p> <p>Vol. 5 No. 3 July- Sept. 2013 (2 Copies)</p> <p>Vol. 5 No. 4 Oct.-Dec. 2013 (2 Copies)</p> <p>Vol. 6 No. 1 Jan.- March. 2014 (2 Copies)</p> <p>Vol. 6 No. 2 April- June. 2014 (2 Copies)</p> <p>Vol. 6 No. 3 July- Sept. 2014 (2 Copies)</p> <p>Vol. 6 No. 4 Oct.-Dec. 2014 (2 Copies)</p> <p>Vol. 7 No. 1 Jan.- March. 2015 (2 Copies)</p> <p>Vol. 7 No. 2 April- June. 2015 (2 Copies)</p>
2	The Sickle Cell Journal	Scell Media Resources	<p>Vol. 1 No. 1, Jan.- March 2008 (2 Copies)</p> <p>Vol. 1 No. 2, April- June. 2008 (2 Copies)</p> <p>Vol. 1 No. 3, July- Sept. 2008 (3 Copies)</p> <p>Vol. 2 No. 1, Jan.- March 2009 (2 Copies)</p> <p>Vol. 2 No. 2, April- June. 2009 (2 Copies)</p>
3	Biokemistri	Klobex Academic Publishers	<p>Vol.1,2,5,Vol.10- 21,2009</p> <p>Vol. 23-No.1, 2011</p> <p>Vol. 23-No.3, 2011</p>

			Vol. 24-No. 1, 2012 Vol. 24-No. 2, 2012 Vol. 26 No. 1, March 2014
4	AfriNet Index	Klobex Academic Publishers	Vol.1,2,5,6,2006
5	NISEB Journal	Klobex Academic Publishers	Vol.1-4,2004
6	Bio-Science Abstracts	Klobex Academic Publishers	Vol.18-19,2009 Vol. 21- No. 3, 2011 Vol. 21, No. 5, 2011
7	ROAN: The Journal of Conservation	A-Triad Associates Publishers and Printers	Vol.1,3,2004
8	Nigerian Journal of Mycology	Mycological Society of Nigeria	Vol.2,2009
9	Kastina Journal of Pure and Applied Science	Faculty of Natural & Applied Sciences Umaru Musa Yaradua University	Vol.2,2010 Vol. 3, No. 2, March 2013
10	Bio-Research	Faculty of Biological Sciences, University of Nigeria	Vol.5-6,2008
11	Bioscience Research Journal (Bioscience Research Communications)	Klobex Academic Publishers	Vol.12-15,20-21,2009 Vol. 24, No. 6, Dec. 2012
12	African Scientist	Klobex Academic Publishers	Vol.1-10,2009
13	Nigerian Journal of Genetics	Genetics Society of Nigeria	Vol.3-5,20-24,2010 Vol. 27, 2013
14	Acta Satech: The Journal of Life and Physical Sciences satech	The School of Science and Technology, Babcock University	Vol.1-3,2010
15	Biological and Environmental Sciences Journal for the Tropics	Department of Biological Sciences, Faculty of Sciences ,Bayero University, Kano	Vol.1-7,2010 Vol. 8- No. 3, 2011 Vol. 9- No. 1, 2012 Vol. 9- No. 4, 2012 Vol. 10- No. 1, 2013
16	Nigeria Journal of Botany	The Botanical Society of Nigeria	Vol.9,11-22,2009 Vol. 24, No. 2, Dec. 2011
17	The Zoologist	Zoological Society of Nigeria	Vol.1,3-8,2010
18	Nigeria Journal of Biotechnology	Biotechnology Society of Nigeria	Vol.18,(1&2)2007
19	Bio-science Research Bulletin	A.K Sharma	Vol.212005
20	Nigeria Journal Parasitology	Textflow Limited	Vol.28,30,2009
21	Nigeria Journal of Microbiology	Nigeria Association For Microbiology	Vol.18-22, Vol.24, No.1,2010

22	African Journal of Clinical And Experimental Microbiology	AJCEM life line publisher	Vol.1-2,4-9,2008 Vol. 12- No. 1, 2011 Vol. 12- No. 2, 2011 Vol. 12- No. 3, 2011 Vol. 13- No. 1, 2012 Vol. 13- No. 2, 2012 Vol. 13- No. 3, 2012 Vol. 14- No. 1, 2013 Vol. 11, No. 2, May 2010
23	Nigerian Journal of Life Sciences (NJLSC)	Faculty of Life Sciences, University of Benin, Benin City, Nigeria	Vol.3 No.1, June 2013
24	Nigerian Journal of Gastroenterology and Hepatology	The Society for Gastroenterology and Hepatology in Nigeria (SOGHIN)	Vol. 5 No. 2, Dec. 2013
25	Journal of Biological Science and Bioconservation		Vol.4, 2012
26	Nigeria Journal of Microbiology	Nigeria society of microbiology	Vol.27 2015 Vol.29 2015 Vol. 30(1) 2016 Vol. 30(2) 2016
27	Nigerian Journal of Science	Science Association of Nigeria	Vol. 50, 2016
28	Nigerian Journal of Mycology(MYCOSON)	The Official Journal of the Mycological Society of Nigeria	Vol.7, 2015 Vol.8,2016
29	Journal of Science Research	Faculty of Science, University of Ibadan	Vol.14, 2015
30	African Journal of Clinical and Experimental Microbiology	Department of Microbiology, LAUTECH Teaching Hospital , Ogbomoso	Vol.18, No.4
31	UMYU Journal of Microbiology Research (UJMR)	Faculty of Natural and Applied Sciences Umaru Musa Yar'adua University Kastina, Nigeria	Vol.2 No.1 June, 2017
32	International Journal of Applied Biological Research	Department of Biological Science, Federal University of Technology, Minna	Vol.7, No.2 December, 2016
33	Nigerian Journal of Applied Science	Nigerian Journal of Applied Science, Department of Chemistry, University of Benin	Vol.35, 2017

SUMMARY

Local titles =33 Volume = 307

MOLECULAR JOURNAL (FOREIGN TITLE)

S/N	TITLE	PUBLISHER	VOLUME
1	Trends In Biochemical Science	International Union of Biochemistry And Molecular Biology	Vol.36
2	Journal of the Marine Biological Association of the United Kingdom	Cambridge University Press	Vol.2,3,4,5,6,2006
3	Quarterly Reviews of Biophysics	Cambridge University Press	Vol.37-40,2007
4	Conservation	Cambridge University Press	Vol.35,2008
5	Plant Genetics Resources Characterization and Utilization	Cambridge University Press	Vol.6,2008
6	Oryx: The International Journal of Conservation	Cambridge University Press	Vol.39-42,2008
7	The British Journal for the History of Science	Cambridge University Press	Vol.39,2006
8	The Egyptian Journal of Genetics and Cytology	Egyptian Society of Genetics	Vol.4,1975
9	America Journal of Botany	Botanical Society of America	Vol.95-99,2012
10	Microscopy And Microanalysis Plant Science Bulletin	Cambridge University Press	Vol.12,2006
11	Plant Science Bulletin	Botanical Society of America	Vol.54-57,2011
12	Seed Science Research	Cambridge University Press	Vol.16-17,2007
13	The Lichenologist	Cambridge University Press	Vol.38,40,2008
14	Biochemical and Biophysical Research Communications	Elsevier	Vol. 401 No. 3, October 22, 2010 Vol. 401 No. 1, October 8, 2010 Vol. 400 No. 4, October 1, 2010
15	Annual Review of Microbiology	Palo Alto	Vol.54-64,2010
16	International Journal of Tropical Insect Science	Cambridge University Press	Vol.27,2007

17	Journal of Tropical Ecology	Cambridge University Press	Vol.20,2004
18	Bulletin of Entomological Research	Cambridge University Press	Vol.98,2008
19	Animal: An International Journal of Animal Bioscience	Cambridge University Press	Vol.1,2008
20	Biotechniques: the International Journal of Life Science Methods.	Life Science Publishing	Vol.42-43,46-47,2009
	Trends in Parasitology	Elsevier Ltd.	Vol.24-26,2010
21	Cell	Cell Press	Vol.3,8,127-128,131-143, 145, 2011
22	Cell Host and Microbe	Cell Press	Vol.3-8,2010
23	Nature	Nature Publishing Group	Vol.463-468,2010
24	Nature Methods	Nature Publishing Group	Vol.5,2008
25	Nature Genetics	Nature Publishing Group	Vol.39,2007
26	Microbe	American Society for Microbiology	Vol.3,4,5, 2010
27	Microbial Drug Resistance	Mary Ann Liebert, Inc Publishers	Vol.14,15,16,17,2011
28	International Journal for Parasitology	Elsevier	Vol.38,40,2010
29	The American Journal of Tropical Medical and Hygiene	The American Society of Tropical Medical and Hygiene	Vol. 57,58,60,62,63,65, 66,67,68,69,70,81,82, 2001
30	Science	American Association for the Advance of Science	Vol.310,313,315,316,323,324, 325,326,329,330,327 2010
31	Nature	Nature Publishing Group	Vol. 474, 2011
32	Parasitology International	Elsevier	Vol. 59, 2010
33	HHMI Bulletin	Howard Hughes Medical Institute	Vol.21,22,23,2010
34	TDR News	World Health Organization	No.82-83,2009,No.85-86,2010
35	Bulletin of the World Health Organization	World Health Organization	Vol.87,2009-Vol.88,2010
36	Urinary Tract Infection among Antiretroviral Therapy Users and Nonusers in Jimma University Specialized Hospital, Jimma, Ethiopia	International Journal of Microbiology, Hindawi Publishing Corporation	Vol.9 2014

SUMMARY

Foreign titles = 36 Volume = 576

BIOTECHNOLOGY JOURNAL (LOCAL TITLE)

S/N	TITLE	PUBLISHER	VOLUME
1.	Nigeria Journal of Physics	Nigeria institute of Physics	Vol.9,12-13,17-20,2008 Vol.26, No.2, 2015
2.	Journal of The Nigerian Association of Mathematical Physics	Nigerian Association of Mathematical Physics	Vol.2,1998,Vol.9-10,13-15,2009 Vol. 21, July 2012 Vol. 22, November, 2012 Vol. 25, No. 2, November 2013 Vol. 28, No. 1, Nov. 2014 Vol.39, Jan. 2017
3.	Nigeria Journal of Solar energy	Solar Energy Society of Nigeria	Vol.26, 2015
4	Bayero Journal of Physics and Mathematical Science	Department of Physics and Mathematical Sciences, Bayero University, Kano	Vol. 7, No.1, Sept. 2016
5	Journal of Science Research	Faculty of Science, University of Ibadan	Vol.14, 2015
6	Nigerian Journal of Science	Science Association of Nigeria	Vol. 50, 2016
7	Nigerian Journal of Applied Science	Nigerian Journal of Applied Science, Department of Chemistry, University of Benin	Vol.35, 2017
8	Journal of Physical Science and Innovation	Centre for Promotion of Educational and Scientific Research	Vol. 9, No.1, 2017
9	Transactions of the Nigerian Association of Mathematical Physics	Nigerian Association of Mathematical Physics	Vol.4, July, 2017
10	Journal of the Nigerian Association of Mathematical Physics	Nigerian Association of	Vol.41, May, 2017

		Mathematical Physics	
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SUMMARY

Local titles = 10 Volume =39

BIOTECHNOLOGY JOURNAL (FOREIGN TITLE)

S/N	TITLE	PUBLISHER	VOLUME
1.	Journal of Polymer Science	John Wiley And Sons	14-26,1988
2.	Journal of Applied Physics	American Institute of Physics	87-110,2011
3.	Radio Science	American Geophysical Union	Vol. 47, No. 3 May-June 2012 Vol.49, Issue 1-2, Jan-Feb, 2014 Vol. 49 Issues 3&4, Mar-Apr,2014 Vol. 49 Issues 4 & 5 May-June 2014
4.	Journal of Applied Meteorology and Climatology	American Meteorological Society	Vol. 53, No. 1, Jan. 2014 Vol. 53, No. 2, Feb. 2014 Vol. 53, No. 3, Mar. 2014 Vol. 53, No. 4, April 2014 Vol. 53, No. 5, May 2014 Vol. 53, No. 6, June 2014 Vol. 53, No. 7, July 2014 Vol. 53, No. 8, August 2014
5.	Geophysics	Society of Exploration Geophysicists. The International Society of Applied Geophysics	Vol.76,No.3, 2011 (2 copies) Vol.76,No.5,2011 (2 copies) Vol.73,No.5,2008 (2copies) Vol.76,No.6,2011 (2copies) Vol.77,No.3, 2012(2copies)
6.	Electronic journal of theoretical physics	International institute for theoretical physics and mathematics	Vol.12 No.32, Jan., 2015 Vol.13 No.35, May., 2016

SUMMARY

Foreign titles =6 Volume = 253

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6. BRITISH INSTITUTE OF RADIOLOGY JOURNALS VIA INASP MEMBERSHIP

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7. CANADIAN SCIENCE PUBLISHING VIA INASP MEMBERSHIP

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8. JSTOR

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12. Aluka (Aluka is an [onlinedigital library](#) focusing on materials about [Africa](#). Digital library of scholarly resources. Features information on botany, politics, history and cultural heritage sites)

URL: <http://www.aluka.org>

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13. Oxford University Press

URL: <https://academic.oup.com/journals>

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15. THE AFRICAN REVIEW OF PHYSICS

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29. SAGE JOURNALS

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31. Oxford University Press

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8.0 REDEEMER'S UNIVERSITY SCHOLARSHIP SCHEME POLICY

Foreword

The Redeemed Christian Church of God (RCCG) a Pentecostal Ministry established in the year 1952 by an illiterate clergyman Pa. Josiah Akindayomi with a divine mandate to preach the gospel across the globe to all humanity, obtained operational license to own and run a faith-based University in 2005.

For more than two decades, the RCCG has been providing Scholarship for wards of her members at primary and post primary school levels, in over 200 locations in Nigeria and some African Countries where there is poor access to education at these levels.

In her bid to do more in terms of Corporate Social Responsibility in education, the RCCG and the Redeemer's University leadership initiated the RCCG-RUN Scholarship in September 2018 to give more opportunities for those seeking tertiary education with poor financial base.

I acknowledge and appreciate the commitment of the Governing Council and Management of the University in putting the policy together.

Pastor Tokunbo Adesanya

Pro-Chancellor & Chairman of Council

Redeemer's University, Ede, Nigeria

2nd October 2019

Eligibility

RCCG/RUN scholarship aims to assist wards of ministers and members of RCCG who are seeking admission into Redeemer's University. Successful applicants will enjoy the Scholarship for the entire period of their stay if they remain on good academic and moral standing.

The Scholarship is available for the Four levels of stakeholders in the church, the ministers, workers, members and those with peculiar challenges, such as those battling with heavy financial burden as a result of critical medical condition and those who have lost one or both parents either before getting admission into the University or during the course of their study in the University. These situations are verified before such can enjoy the scholarship.

Application Procedure

Applicants including both fresh men and returning students at resumption in the first semester of every session are expected to apply through the Redeemer's University Admission portal at adms.run.edu.ng by completing the scholarship form. Other relevant information is found here.

Other available Scholarships at Redeemer's University

Student Support Scheme

The Student Support Scheme is handled by the Chaplaincy Department of the Redeemer's University. This scholarship is funded by internal donors, especially RUN staff members and the RUN Chapel. It is specially designed to assist indigent students who find it difficult to conclude their undergraduate programmes. It could be accessed only by students on minimum CGPA of 2.5 across levels starting from 200Level. Also, students must be of good manners and the need for such support must be well established. While support is based on availability of funds, final year students are given special preference. However, a student can only benefit from the SSS for a maximum of two times. This is to allow for wider reach among all students.

Ede Indigene Scholarship

This scholarship is meant for indigenes of Ede, the host town of the university. It is a full scholarship given to creditably qualified Ede indigenes selected across the different constituencies of the town irrespective of gender, religion or creed. It is part of the University's Corporate Social Responsibility. Students on this scholarship must maintain a CGPA of 3.5 at the end of every semester to be eligible throughout the duration of a programme. Currently, six indigenes of Ede are given the scholarship every year.

RUN Alumni Association Scholarship

This scholarship is run by the alumni of Redeemer's University and available to financially constrained students at 200 level and above who are on the CGPA of 3.5. Calls for application are sent from Alumni Office through alumnirelations@run.edu.ng

Conclusion

This Policy may be cited as Redeemer's University Student Scholarship Policy, 2019 and it comes into operation on the date fixed by the Governing Council of Redeemer's University.

Amendment or Update of this Policy

Redeemer's University reserves the right to modify, rectify or update this Policy as soon as necessitated.

Student Scholarship Resources:

Redeemer's University

P.M.B. 230

Ede

Osun-State

Nigeria.

Contact No on Student Scholarship Policy

Email: studentscholarship@run.edu.ng

9.0 POLICY ON SEXUAL HARASSMENT

Foreword

The Redeemer's University was borne out of a vision the Visitor had way back in 1979 when he visited Oral Roberts University in the United States of America. The precursor to the establishment of Redeemer's University was, therefore, the conviction of the great role University education could play in the social, technological as well as spiritual development of a nation. Although this dream could not materialize in time, the opportunity was made available when the Federal Government promulgated a decree allowing private individuals or organizations to establish universities in Nigeria.

The vision of the University is: *"To be the foremost academic institution setting standards through continuous commitment to excellence geared towards making a transformative impact on society"*. Furthermore, our mission is: *"To continuously impact the society through commitment to excellence in education, research, creativity, innovation, entrepreneurship and raising global leaders as change agents imbued with God-fearing attributes"*. At the inauguration of the pioneer Board of Trustees of the University on Saturday, 3rd April, 2004, the General Overseer of the RCCG and **Visitor** to the University, Pastor E. A. Adeboye made the following profound statements on the vision of the University:

*The vision of the University is not just to save Nigeria, it is not just to save the African population of the world, the Almighty God is about to start with you, an institution that will save the world. A time is coming when every product of this University will be a world evangelist. I can at least tell you that the purpose of Almighty God is to produce fanatics for Himself from this University. Fanatics that will stand up and confront every terrorist that the enemy may want to produce and subdue them not with force of arms but with the power of the Holy Spirit. **It is as if God Himself were saying this is my last Bible College.** Oh they would come and study medicine, English and others but that is just a mask. It is going to be one University that the slightest sign that this fellow is not walking in the way of the Lord, he or she goes and that one will be made absolutely clear from the word go. And the same applies to lecturers, Professors; the same applies to anyone who would*

work in this University. It is going to be different. We will be very gentle on the surface, we will be very kind, very loving, we will be like gold that you can bend in any direction you want, but it would not be easy to break.

This University as a faith-based institution of higher learning is expected to provide a conducive and safe environment to both students and staff, free of all forms of vices. It is also expected to be a beacon and standard bearer in every aspect of human relationships. We cannot afford to be an institution where anything goes. We must in line with the vision of our founding fathers uphold the highest level of integrity in relationships among members of the University community. Our vision will not allow us do otherwise. In view of the decline in moral standards in the world of today, the vulnerable groups must be shielded from all forms of harassment. This is why it cannot therefore, afford to condone sexual harassment.

It is in this regard, a sexual harassment policy has been put in place to serve as a guide to both staff and students that all forms of sexual harassment will be dealt with in order to safeguard the integrity of the University and also assure the public of an institution concerned with the wellbeing of members of its community.

I acknowledge and appreciate the commitment of the Governing Council and Management of the University in putting the policy together.

Professor Anthony Akinlo

Vice Chancellor

INTRODUCTION

Value Statements

Redeemer's University's core values collectively highlight the significance of treating everyone with mutual respect, dignity **and equality**. Conduct, which amounts to sexual harassment will, therefore, be dealt with seriously and, if proved, will lead to disciplinary action up to and including termination of appointment or dismissal from the University.

The Governing Council of RUN is responsible for ensuring a healthy work and study environment with zero-tolerance for all types of sexual harassment and matters connected therewith or incidental thereto.

In principle, the private life of members of Redeemer's University is their own concern and shall not be intruded upon by the University. In the same vein, it shall be an offence under this policy for an employee of the University to carry himself/herself in a manner that brings the University into disrepute in the context of involvement in sexual harassment including outside their involvement with the university.

Definition Section

(a) **Student:** a person (undergraduate or postgraduate) who is studying in Redeemer's University.

(b) **Staff:** all persons (permanent and contract) employed by Redeemer's University.

(c) **Third Party:** a person who is not a Redeemer's University staff member, but who is involved in any minor role or business associated with Redeemer's University. Third

parties include contractors, visitors, and residents of the University, as well as dependents, domestic or business help of Redeemer's University staff.

(d) **Visiting Student:** A person who applied and/or is officially permitted to be in Redeemer's University to spend a given period of time, ranging from one day up to one year, in Redeemer's University on a course.

(e) **Student Visiting Associates:** students who study at Redeemer's University for a short time without studying full-time or pursuing a specific degree, certificate or diploma.

(f) **Gender Harassment:** is any act of sex-discrimination or non-sexual act of harassing or otherwise persecuting an individual because of his or her gender identity.

(g) **Governing Council:** The Governing Council is the governing body of Redeemer's University that exercises general oversight over the institution and its affairs.

(h) **Compromising Situation:** A situation that can make one vulnerable to being embarrassed or incriminated in some way

(i) **Compromising Location:** A location that can make one vulnerable to being embarrassed or incriminated in some way.

(j) **Aiding and abetting:** action that helped, assisted, supported or approved someone else's illegal act, an "accessory" to the crime.

(k) **Office:** a room or building used as a place for official, commercial, professional or bureaucratic work or a position of authority or service in the university.

(l) **Indecent dressing:** Is any dressing that does not conform to the Redeemer's University Dress Code.

(m) **Harassment:** Harassment is any social act that causes mental or emotional suffering, insults, demeans, terrifies, threatens and derogates the dignity of a person which can hinder the person from achieving his/her full potential in any endeavour. Such harassment could be through language or touch that is offensive to the recipient.

(n) **Heterosexual:** Sexually attracted to persons of the opposite sex.

(o) **Homosexual:** Sexually attracted to persons of one's own sex.

(p) **Sex Discrimination:** Discrimination against a person on grounds of sex/gender.

(q) **Non-sexual Harassment:** may include any comment, action, or type of behaviour that is threatening, insulting, intimidating, or discriminatory and upsets the university environment.

(r) **Sexual Misconduct:** may encompass any unwelcome behaviour (verbal, non-verbal and/or physical) of a sexual nature that is committed without consent or by force, intimidation, coercion, or manipulation.

(s) **University:** Redeemer's University.

(t) **Committee:** Means an anti-sexual harassment committee as established in paragraph 4 of this policy.

Other Definitions: For any other definition, reference shall be made to the ordinary meaning of words as defined in the Latest Version of the Oxford Advanced Dictionary.

Application

- This **policy** applies to all members of the University which include Student, staff, third parties, Students visiting Associates/visiting students, and any other person that has

any permanent or temporary employment with the University. Any reference to "member of the University Community" includes any or all of these.

- ❑ This policy shall cover situations within the University environment, including properties owned by university entities.

- ❑ This policy shall cover situations where the University staff member or student is the subject of allegations in situations that occur at a facility that is a non-University controlled entity and where the circumstances are related to their role with The University. This could happen when the University approves of a university-related event, such as excursions, moot court competitions, academic competitions, seminars, conferences, workshops, etc.

SEXUAL HARASSMENT

Sexual Harassment Defined

Sexual harassment for this policy may mean:

(a) any unwanted sexual advance; appeal for sexual favours; or other verbal or non-verbal act of a sexual nature, which in the view of the person concerned, and/or of a reasonable person, interferes with the studies, work, productivity or general sense of well-being of others.

(b) an undesirable verbal, non-verbal, or physical conduct of a sexual nature including requests for sexual favours and unwelcome or frequent sexual interest intended to produce an intimidating environment or be a base for decisions on the recipient.

NOTE: Consensual relationships or relationships or conducts which are mutually acceptable to the parties involved do not constitute sexual harassment.

Constituents of Sexual Harassment

Social behaviour that may constitute sexual harassment within RUN includes but is not limited to

- Sexual Coercion
- Sexual Imposition
- Seductive Behaviour
- Sexual Bribery

Sexual Coercion: Grabbing, forced kissing, fondling, assaulting and coercing another for sexual intercourse or rape.

Sexual Imposition: Physical conduct of a sexual nature which involves unwanted/inappropriate physical contact, sexually explicit pictures including calendars, posters or electronic mail messages or mobile messages, unwanted letters or poems, stalking, unnecessary touching, patting, pinching, brushing against another person's body.

Seductive Behaviour: this includes non-verbal conduct of a sexual nature, which refers to the display of pornographic or sexually suggestive pictures, objects or written materials; leering, whistling or making sexually suggestive gestures, indecent dressing, exposing one's private parts, sitting or gesturing sexually, sexually suggestive touching, inquiries into colleague's sex life, obscene letters or comments.

Sexual Bribery: verbal conduct of a sexual nature including but not limited to unwelcome sexual advances, exchange of sex for mark(s), propositions or pressure for sexual activity, suggestions for social activity outside the work and study place, sexual favours in return for rewards and/or admission and threats if sexual favours are not provided, sexually explicit remarks, using position of authority to request a date and repeated requests for a date after being told 'no', blackmail etc.

Sexual Harassment could be heterosexual or homosexual and may arise in the context of the following relationship:

- Student to Student
- Student to Staff
- Student to Third Party
- Staff to Student
- Staff to Staff
- Staff to Third Party
- Third party to Staff
- Third Party to Student
- Third Party to Third Party

2. OFFENCES AND PENALTY

Sexual Harassment as defined in this policy is prohibited within the University environment or situations covered above.

Any staff, student or third party found culpable of sexual harassment by the Anti-Sexual Harassment Committee established under the policy shall be liable to anyone or more of the penalties prescribed below.

3.3. The penalties for sexual harassment include:

For Students:

- Expulsion
- Suspension of Studies
- Written apology
- Warning notification
- Withholding results or award of degree pending the inquiry's determination.
- Debar from campus or examination hall pending the inquiry's determination.

Debar from contesting students' election or holding position in any student association

Reprimand

Undergo counselling session or rehabilitation

For Staff:

Dismissal

Compulsory retirement

Suspension

Termination of appointment

Withholding of increment

Deferment of increment

Removal from position of authority or service

Demotion from a superior position

Postponement or withholding of promotion

Payment of compensation to victim

Written apology

Warning notification

For Third Parties:

Rustication from RUN premises

Payment of compensation based on damage(s) caused

Formal apology

Letter of Warning

Suspension from activities in RUN pending the determination of the inquiry

Subject to police arrest according to the Laws of Osun State, Nigeria.

ANTI- SEXUAL HARASSMENT COMMITTEE

Establishment of the Anti-Sexual Harassment Committee

The Vice-Chancellor shall establish an Anti-Sexual Harassment Committee to perform the functions stipulated in Paragraph 4.2.

Functions of the Anti-Sexual Harassment Committee

The Committee shall be responsible for:

Creating awareness and disseminating information about sexual awareness including the precautionary/preventive measures contained in **Appendix A** of this policy.

Design, Disseminate and make available to the university community at all times, a complaint form (**Appendix C**), and an Oath Form (**Appendix D**)

Handling Complaints with respect to any issues mentioned in this policy.

Adjudicating over cases that bothers on paragraph 3 of this policy.

Seeing to the effective implementation of this policy in accordance with **Appendix E**.

Defining the meaning of the provisions of the policy in the light of any given facts, in any context where 'may' is used in this policy.

Any other functions that may reasonably be expected in the light of the provisions of this policy.

Membership of the Anti-Sexual Harassment Committee

- The Committee will constitute a minimum of nine persons and where it is in excess, it must be odd-numbered with the gender disparity not exceeding one. (For example: male to female/ female to male ratio- 5:6).

Membership of the Committee shall mandatorily include:

- An experienced, matured or expert person to serve as Chair;
- Representative of each faculty;
- Representative of Non-Academic Staff not below the post of Principal Assistant Registrar;
- A Non- Academic Staff, who will serve as the secretary of the Committee;
- Representatives of the RUN Students' Association [one (1) male and one (1) female];
- A Christian Clergy within the University
- An Additional Representative from the College of Law.

Provided that the representatives of the RUN Students Association shall not participate in any function of the committee that involves staff to staff or third party to staff relationship only.

All members sitting on this committee shall be persons of high integrity, credibility and maturity.

As far as possible, half of the Committee members will be replaced every two years provided that no member may sit on the committee for more than four consecutive years.

The committee is bound to maintain confidentiality on all grievance cases and proceedings and will give written recommendations to the Vice-Chancellor after the completion of such cases.

Procedure for Handling Sexual Harassment Cases

- Offences under this policy shall be brought before the Committee within a reasonable time while still a party is still a staff, student or contracting any business within RUN or after the harassee must have left or graduated from RUN using a complaint form made available as designated places by the committee.
- The question of whether or not a person has sexually harassed another in contravention of paragraph 3 shall be decided by a simple majority decision of the committee. Provided that such simple majority decision is obtained by a secret ballot system conducted in a manner as to secure the independence and untainted views of individual members of the committee.
- The Committee shall comply with the procedure for inquiry as detailed in '**Appendix B**' of this policy.
- Any dissenting opinion from the simple majority among the Committee members during or at the conclusion of an enquiry may at the instance of the dissenting member be noted along with reason(s) for the dissent.
- A member of this committee can excuse himself or herself in the event of any possibility of conflict of interest.
- **THE PRE-INQUIRY AND, THE ENTIRE PROCEEDINGS OF THE COMMITTEE SHALL BE PROPERLY DOCUMENTED FOR FUTURE REFERENCE.**

MISCELLANEOUS

Appeal

Any RUN member who has been punished or a decision has been take to punish him/her for sexual harassment misconduct as defined under this policy shall have the right of appeal to the Vice-Chancellor or to other authorities with the jurisdiction to hear the matter, in accordance with the provisions in the Staff Conditions of Service and Student Handbook.

Legal Prosecution

The provisions under this policy does not preclude a complainant from taking further legal action under the Laws of Osun State, Nigeria on the harassment that has occurred neither does such action prohibit RUN from taking any disciplinary measure(s) that may deem necessary in such circumstance.

CONCLUSION

Citation

This Policy may be cited as Redeemer’s University Sexual Harassment Policy, 2019 and it comes into operation on the date fixed by the Governing Council of Redeemer’s University.

Amendment or Update of this Policy

Redeemer’s University reserves the right to modify, rectify or update this Policy as soon as necessitated.

Contact Details:

Sexual Harassment Resources:

Redeemer’s University

P.M.B. 230

Ede

Osun-State

Nigeria.

Contact No:

Email:shpolicy@run.edu.ng

APPENDICES

- A. Precautionary/Preventive Measures
- B. Procedure for Inquiry
- C. Practical Steps for Implementation

APPENDIX A: PRECAUTIONARY/PREVENTIVE MEASURES AGAINST SEXUAL HARASSMENT

- Some possible signals one must watch out for as precursors to Sexual harassment include but are not limited to the following;
 - Suggestive sexual behaviour (catcalls, wolf-whistling)
 - Demand for special attention
 - Unsolicited visitation or persistent visitation request
 - Invitation to social events
 - Giving of over-personalized and unsolicited gifts
 - Demand for phone number and inappropriate phone calls at odd times
 - Suggestive sexual language/conversation
 - Unsolicited social media chats, images, songs, videos, sexting, etc.
- The cardinal rule for dealing with unwelcome social behaviour is creating a zero-tolerance environment to it. State with clarity to the harasser that such behaviour is unwelcome, offensive and uncondusive and should stop immediately.
- Creating **and maintaining** a work or academic environment free of sexual harassment is the responsibility of every staff, student and third party of RUN.
- The most effective deterrent against sexual harassment in the work or study place is creating awareness through proper education and orientation. Persons who are aware of conducts which constitute sexual harassment are less likely to behave in a manner which is offensive to their colleagues. Unwilling victims who are aware of their rights and avenues of seeking redress will be more assertive and forthcoming in putting a stop to any offensive behaviour.

- ❑ As a first step towards dealing with sexual harassment in the work or study place, all members of RUN are strongly encouraged to familiarize themselves with the provisions of this policy, particularly with regard to identifying behaviours which constitute sexual harassment.
- ❑ Lecturers, managers and supervisors have an added responsibility of creating an environment free from sexual harassment by: (a) portraying highest exemplary standards of conduct; (b) clear dissemination of the Redeemer's University Sexual Harassment Policy (RUSHP) with all members, especially new ones; (c) annual review of the efficiency and implementation of the RUSHP; and (d) encouraging a zero-tolerance sexual harassment working and studying environment.
- ❑ Supervisors, managers, mentors and teachers are to play important role in this effort by ensuring that any incident of unacceptable behaviour, including sexual harassment, intimidation and hostility, is promptly dealt with and corrective action taken.
- ❑ Student, Staff and third party of RUN should not be found in compromising situation and location as it relates to the subject matter.

APPENDIX B: PROCEDURE FOR INQUIRY

- I. Upon receiving a formal complaint, the Committee shall ask the complainant to prepare a detailed statement of the incident(s). A statement of allegations will be drawn by the Committee and sent to the accused.
- II The accused person shall be asked to prepare a written response to the statement of allegations and submit to the Committee within a specified period.
- III Confidentiality will be duly observed in the course of inquiring and hearing of the grievance proceedings.

- IV An officer in the organization could be designated to provide advice and assistance to each party if requested by either of them. Similarly, the complainant and the accused person shall have the right to be represented or accompanied by a member of staff, a friend, or a colleague.
- V The Committee shall organize verbal hearings with the complainant and the accused, separately and jointly as it deems fit.
- VI The accused shall be allowed to cross-examine the complainant.
- VII The Committee shall take witness statements of other relevant persons and consider their evidence whenever deemed necessary.
- VIII The Committee shall provide both the complainant and witness(es) with adequate protection against any form of retaliation whatsoever, and any person found to have purposely engaged in retaliation shall be subject to disciplinary action.
- IX The Committee shall make a decision after carefully reviewing the circumstances and the evidence presented before it.
- X If the accused person, having been provided fair opportunity to participate in the inquiry and defend himself/herself fails to participate in the inquiry, the Committee will conduct the inquiry in his/her absence and such decision reached shall be binding on all parties involved.
- XI The Committee shall ensure that the report of their inquiry findings is dispensed with as speedy as possible within a stipulated period of time and ensure confidentiality throughout the inquiry process including the following ways:
 - The Management shall make temporary adjustments to avoid interactions between complainant and accused for related official purposes during the investigation period. This may include temporarily changing the office (in

case both share an office), allocating another study area, the accused may be sent on leave, or the accused suspended during the time period of the investigation.

The ways and manners of parties involved in any grievance brought before the committee should be monitored strictly in order to prevent them from self-harm of any kind and retribution from either party.

Where an accused person is a member of the management team and culpability is established, the Governing Council shall take appropriate actions as established in the University law.

If the complaint is lodged against a member of the Standing Committee, such a member shall be made to step down from the Committee pending determination of the matter. If culpable, he/she shall be replaced with another member.

APPENDIX C: PRACTICAL STEPS OF IMPLEMENTATION

During the orientation programmes for matriculating students and pre-convocation programmes for graduating students, there should be sessions devoted to educating them about sexual harassment and sexual violence. It is recommended that an expert in this field be invited to go through the policy on sexual harassment.

The University should conduct training sessions on sexual harassment for staff and students of the University and Management should discuss the policy on prevention of sexual harassment at staff meetings and evaluate their level of understanding through tests or examinations.

The University should educate the students on the University's policy on the prevention of sexual harassment and conduct regular and annual review of the efficacy and implementation of the policy.

Once a case of Sexual Harassment has been reported, the exam script(s) of the reporting student(s) should be subjected to second marking by another lecturer and if necessary, should be externally marked.

There should be thorough background checks conducted on staff to be employed by the University. This may reveal previous sexual misdemeanours.

Newly employed staff are to sign an oath at the time of taking up employment that they would not be involved in any form of sexual harassment.

There should be notices placed all over the campus that the University has zero tolerance for sexual harassment. This should be similar to the notices on display about the University policy on the use and possession of hard drugs and other illegal substances.

There should be dedicated phone lines where cases of sexual harassment can be reported. Harasseees should be encouraged to make phone calls or send text messages through these phone lines. The dedicated telephone numbers should appear on notice boards.

RUN should endeavour to adhere strictly to its dress codes for staff, students and third party and they should model appropriate behaviour, as well as support victims of sexual harassment when filing a complaint before the Inquiry Committee.

Lectures on Sexual Harassment should be included and examined in General Studies (Leadership Studies) courses for undergraduate students.

As for the staff, information of such should be disseminated in RUN retreats organised for them and they should also be examined or rated accordingly.

As for the third party, specifically the RUN contractors, a clause prohibiting sexual harassment shall be contained in their award of contract issued to them by RUN.

RUN shall provide a number of Sexual Harassment and Discrimination Contact Officers across the faculties who can provide a first point of contact for anyone seeking information about sexual harassment issues as well as an email address where victim(s) can make a report confidentially.

Counselling units should be created in order to address reports of sexual harassment and students/staff *must* have a clear knowledge of how to make complaints of sexual harassment.

Staff should be advised not to have sessions with students in compromising situation(s) or locations.

Staff should not encourage receiving gifts from students.

Students are not encouraged to visit staff quarters without due permission from the University.