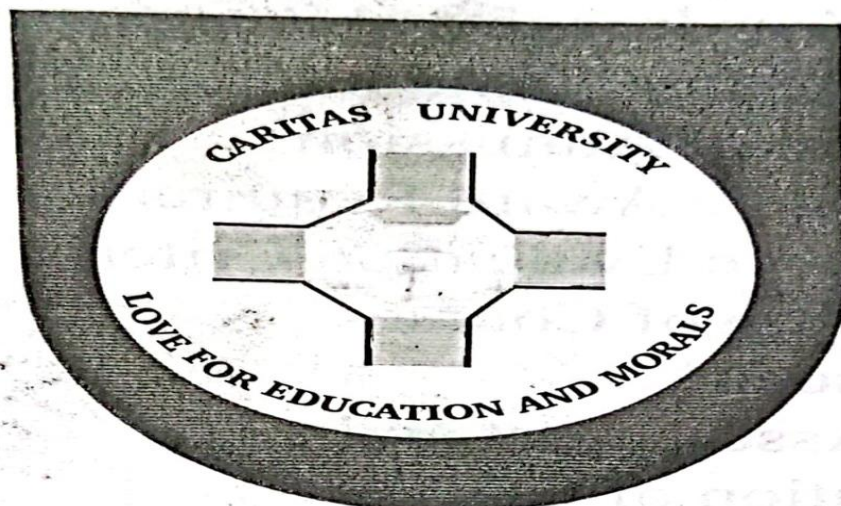


CARITAS UNIVERSITY
AMORJI-Nike
P. M. B. 01784
EMENE, ENUGU



ACADEMIC CURRICULUM FOR THE
DEPARTMENT OF MICROBIOLOGY
FACULTY OF NATURAL SCIENCES
CARITAS UNIVERSITY ENUGU.

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1.0 INTRODUCTION

Microbiology was originally Microbiology & Biotechnology which was among the first batch of Departments to take off in the Faculty of Natural Sciences alongside the Departments of Industrial Chemistry, Biochemistry, Computer Science and Mathematics and Statistics in 2005/2006 academic session. The new Department of Microbiology now covers all the relevant courses for the award of Bachelor of Science Degree in Microbiology. A Bachelor of Science Degree in Microbiology takes a minimum of four academic sessions consisting of eight semesters.

2.0 PHILOSOPHY

The basic philosophy of Microbiology programme, in keeping with the fundamental philosophy of the University, is designed to encourage and promote sound training of students for professional skills and competences in all aspects of Microbiology. To actualize these, there is need to get the maximum out of every student's potential through the development of their skills and abilities. The Department desires to train mission-oriented

microbiology graduates who will competent professionals and will be able to relate their studies to practical real-life situations. This is accomplished by motivating the students and having regular and frequent discussion between the students and their academic advisers. The Department believes that there is a need to encourage optimal balance Of academic excellence, morality and discipline.

3.0 AIMS AND OBJECTIVES

The specific objectives of Microbiology program me are as follows:

1. To train graduates who can become self-employed in the various areas of Microbiology.
2. To train graduates in modern Microbiology for professional studies and career
3. To provide a solid training for research in special areas of Microbiology at higher degree level.
4. To produce graduates who are confident and equipped to meet the challenges posed by microorganisms in relation to health, agriculture, industries and environment.
5. To train graduates with broad knowledge who are capable of appreciating and using inter disciplinary approach to the use of biological agents and systems for the benefit of mankind.

6. To develop in students' other skills and attitudes relevant to scientific endeavor and service to society.
7. To provide appropriate service Courses other Departments that require working knowledge of Microbiology.

4.0 JOB OPPORTUNITIES

Students on successful graduation will be well equipped to have a wide range of career opportunities in science and technology-based Institutions as well as to be self-employed in such sectors of our economy as:

- Medical diagnostic and research laboratories.
- Pharmaceutical research centers.
- Epidemiological and disease control.
- Quality control of food, beverages, textiles and leather industries.
- Biodegradation of industrial wastes in public and private sectors.
- Genetic engineering/biotechnological research Institutes.
- Oil companies.
- Food processing industries.
- Brewing and other fermentation industries.
- Livestock production industries.
- Institutions of higher learning and research.
- Non-governmental organizations.

5.0 ADMISSION REQUIREMENTS

a. Four-year Integrated program

The candidate seeking admission must satisfy all the University entry requirements, including credits passes in: English Language, Mathematics, Physics, Chemistry and Biology in GCE/SSCE/WAEC/NECO/NABTEB obtained at not more than two sittings.

b. Direct Entry Candidates

Candidates seeking admission through direct entry will normally enroll in the second year of the programme. To qualify for admission, the candidate must satisfy the requirements as specified in (a) above. In addition, the candidate must have passed GCE

Advanced level, HSC or equivalent with A level passes in Biology, Chemistry, Physics or Mathematics, or good ND credit pass in Biology, Food Science, Biochemistry, etc., and related subjects will be considered for direct entry admission.

C. Transfer students from recognized Universities shall be admitted in accordance with conditions stipulated in Undergraduate Academic Regulation of Caritas University.

6.0 DEFERMENT OF ADMISSION

Deferment of admission may be granted provided the candidate meets the University policy on the deferment of admission.

7.0 B.Sc. DEGREE AWARD REQUIREMENTS

To be eligible for the award of B.Sc. Degree in Microbiology, the student must satisfy the following conditions:

- a. The stipulated University and Departmental entry requirements.
- b. The approved requirements of the Faculty of Natural Sciences, including General Studies with respect to workload, registration of courses, programme duration and full payment of all approved fees.
- c. The programme requirements involve satisfactory completion of all approved courses.
- d. Satisfactory completion of SIWES (Industrial attachment) with a recognized organization.
- e. The student must be found worthy in character.

8.0 PERFORMANCE EVALUATION CRITERIA

a. Methodology

Students are to be examined by a combination of the following methods:

- i. Continuous Assessment
- ii. Formal Semester Examinations
- iii. Laboratory and Industrial Training Reports

iv. Seminar and Project Presentations

External examiner is invited in the final year to assess final year courses and projects and to certify the overall performance of the graduating students as well as quality of teaching.

b. Grading system

The following grading system is adopted

Marks (0/100)	Grade	Point	Remarks
70 - 100	A	4	Pass
60 - 69	B	3	Pass
50 - 59	C	2	Pass
45 -49	D	1	Pass
0 - 44	F	0	Fail

The total score for a course is obtained by adding the score made by the student in the continuous assessment (maximum of 30marks) and in the examination (maximum of 70 marks).

c. Degree Classification

The degree award is classified according to the following system.

Cumulative Grade point Average (CGPA)	Degree Classification
4.50 – 5.00	First Class
3.50 – 4.49	Second class (upper division)
2.70– 3.49	Second class (lower division)
1.0 – 2.69	Third class
<1.0	Fail

9.0 REGISTRATION OF COURSES

1. It is obligatory that students should register courses approved for their level at the beginning of each semester of every session.
2. Students should register for a minimum of 16 credit-load, and a maximum of 24 credit unit load per semester of every session.
3. Students should consult their academic advisers for proper guidance during course registrations.
4. Students who attempt examinations in courses which they have not registered shall obtain no result in those courses.
5. Registration forms must be carefully and correctly completed. Cancellations, erasures, mutilations, correction fluid alterations must not be allowed.
6. Carry-over courses must be registered first before adding current semester courses.
7. Carry-over courses must be properly listed and registered in the appropriate section provided on the registration form.

9.1 COURSE LOAD

The normal course load for a full-time range from 16 (minimum) to 24 (maximum) credit units per semester. This means that no full-time student is permitted to register for less than 16 or more than 24 credit units in a semester.

Note that the total credit units for both failed courses and current courses must not exceed the set maximum.

10.0 COURSE ASSESSMENT AND COMPUTATION OF CGPA.

- a) Every course is continuously assessed using practical (experimental) reports, quizzes, tests, assignments, and carries 30 marks of the total score for the course and is administered during the lecture period. (i.e., before the semester examination).
- b) The entire semester work is further assessed during semester examinations. For a particular course, the semester examination carries a total of 70 marks.
- c) The final score obtained by a student in a particular course is therefore the sum of what he/she obtained in both continuous assessment and semester examination in that course.

- d) All registered courses other than those audited are to be passed by the student except a waiver is granted by the Senate.
- e) Grade points earned at all attempts (including failure in particular course) are used for computation of the CGPA.
- f) Students are not permitted to repeat any course which they have passed.

10.1 CLASS ATTENDANCE

Students are advised as usual to attend lectures and to do their assessments as required. However, a minimum of 75% attendance to lectures and practical sessions are required for a student to be eligible to write the semester examination in each course.

10.2 COMPUTATION OF GPA AND CGPA

(i)	(ii)	(iii)	(iv)	(v)	(vi)
Credit Units	Percentage scores	Letter Grades	Grade point (GP)	Grade point Average (GPA)	Cumulative Grade Point Average
Vary according to contact hours assigned to each course per week per semester and	70-100 60-69	A B	4 3	Derived by multiplying (i) and (iv) and dividing the	

according-to student workload	50-59	C	2	total credit units	
	40-49	D	1		
	0-44	E	0		

11.0 CONTINUATION, PROBATION AND WITHDRAWAL

- a. Continuation: A student shall be allowed to continue in his/her programme if at the end of the session he/she makes a CGPA of 1.00 and above
- b. Probation: A student shall be placed on probation for a period of one academic session if at the end of the session he/she makes a CGPA of less than 1.00.
- c. Withdrawal:
 - i. A student shall be withdrawn from the programme if at the end of the probation period he/she fails to make CGPA of 1.00 and above.
 - ii. Temporary withdrawal on health grounds or any other reasons may be allowed but for a period of not more than two academic sessions. Procedure for such temporary withdrawal shall be as stipulated in the Undergraduate Academic Regulations of Caritas University.
 - iii. Any student who withdraws from his/her programme without formal approval shall be deemed to have abandoned the program and shall therefore not be readmitted into the programme.

12.0 DURATION PROGRAMME

A maximum of six years is allowed for a student who was admitted through UTME/Pre-Degree, or five years for a student who is admitted through direct

entry to obtain his/her B.Sc. Degree in Microbiology. Any student who fails to obtain his/her Degree after the stipulated period shall be asked to withdraw from the programme.

13.0 EXAMINATION MALPRACTICE

Any student caught in examination malpractice should sign examination misconduct report form. This will be forwarded to Senate. The Senate then determines the gravity of the malpractice and gives a commensurate punishment as contained in the student's handbook. The punishment may be expulsion from the university, repeat the year, award "F" or warning.

14.0 REVIEW OF EXAMINATION SCRIPTS OF AGGRIEVED STUDENTS

Any student who is not satisfied with the score he/she was awarded in any course may apply for the review of his/her script. Procedure for such applications shall be as approved by the Caritas University.

15.0 CURRICULUM FOR B.Sc. (Hons. IN MICROBIOLOGY)

15.1 COURSE CODE

The, course code for Microbiology is MCB followed by three-digit number. The first digit indicates the year of study, the second digit indicates the semester (odd numbers denote first semester while even numbers denote second semester courses). The third digit indicates the stress area

15.2 COURSE STRESS AREAS

STRESSAREAS	NUMBER
General/ Introductory course in Microbiology	0
Environmental Microbiology	1-2
Food/ Industrial Microbiology	3
Medical Microbiology	4-5
Genetics/ Epidemiology	6
Practical	7
Student Industrial work experience scheme (SIWES)	8
Research Projects/ Seminars	9

15.3 COURSES OFFERED AT DIFFERENT LEVELS

FIRST YEAR (100 LEVEL) FIRST SEMESTER

S/N	COURSE CODE	COURSE TITLE	CREDIT
1	GST 111	Communication in English	2
2	BIO 101	General Biology	2
3	CHM 101	General Chemistry	2
4	MTH 101	Elementary Mathematics 1	2
5	PHY 101	General Physics 1	2
6	COS 101	Introduction to Computer Science 1	3
7	BIO 107	General Biology Practical 1	1
8	CHM 107	General Practical Chemistry 1	1
9	PHY 107	General Practical Physics 1	1
10	GST 113	Moral Education	1
11	CUA-GES 101	Communication in French	1
12	CUA-GES 115	Nigerian Legal System	1
	TOTAL		19

FIRST YEAR (100 LEVEL)
SECOND SEMESTER

S/N	COUSE CODE	COURSE TITLE	CREDIT Unit
1	BIO 102	General Biology II	2
2	MTH 102	Elementary Mathematics II	2
3	PHY 102	General Physics II	2
4	CHM 102	General Chemistry II	2
5	CHM 108	General Chemistry Practical II	1
6	PHY 108	General Physics Practical II	1
7	BIO 108	General Biology Practical II	1
8	GST 112	Nigerian Peoples Culture	2
9	CUA-GES 114	Communication in English	2
10	CUA-GES 122	Eptatism and Igbo metaphisis	1
11	CUA-GES 126	Basic Communication in Igbo	1
12	CUA-GES 124	Nigerian Legal system II	1
	TOTAL		18

**200 LEVEL
FIRST SEMESTER**

S/N	COURSE CODE	COURSE TITLE	CREDIT UNIT
1	MCB 210	Introduction to Microbiology	3
2	ICH 211	General Inorganic Chemistry I	2
3	ICH 213	General Organic Chemistry I	2
4	SAT 211	Statistics for Natural Science	2
5	ICH 212	General Physical Chemistry	2
6	BCH 211	General Biochemistry	3
7	BCH 212	Practical Biochemistry	2
8	GST 212	Entrepreneurship studies I	2
	TOTAL		18

200 LEVEL**SECOND SEMESTER**

S/N	COURSE CODE	COURSE TITLE	CREDIT UNIT
1	MCB 220	General Microbiology	3
2	MCB 227	Basic Techniques in Microbiology	2
3	ICH 220	Analytical Chemistry	2
4	STA 221	Statistics for Natural Sciences II	2
5	BCH 221	General Biochemistry II	2
6	BCH 222	Practical Biochemistry II	2
7	GST 222	Entrepreneurship Studies II	2
8	GST	Peace and Conflict	2
	Electives	Select a minimum of 3 credit units	
9	BIO 220	Introductory Genetics & Cell Physiology	3
10	BIO 222	Introductory to Ecology	3
11	BIO 221	Invertebrate Zoology	3
12	BIO 223	Introduction to Food Science	3
	Total		20

300 LEVEL**FIRST SEMESTER**

S/N	COURSE CODE	COURSE TITLE	COURSE UNIT
1	MCB 310	Microbial Physiology and Metabolism	3
2	MCB 311	Biodeterioration	2
3	MCB 312	Microbial Ecology	3
4	MCB 313	Food Microbiology	3
5	MCB 314	Immunology	3
6	MCB 315	Mycology	3
7	MCB 316	Bacteria Diversity	3
	TOTAL		20

**300 LEVEL
SECOND SEMESTER**

S/N	COURSE CODE	COURSE TITLE	COURSE UNIT
1	MCB 328	Students Industrial Work Experience Scheme (SIWES)	6
	Total		6

**400 LEVEL
FIRST SEMESTER**

S/N	COURSE CODE	COURSE TITLE	CREDIT UNIT
1	MCB 411	Environmental Microbiology	3
2	MCB 413	Industrial Microbiology	3
3	MCB 414	Pharmaceutical Microbiology	3
4	MCB 415	Virology & Tissue Culture	3
5	MCB 416	Principles of Epidemiology & Health Care	3
6	MCB 419	Essays in Microbiology (Seminar)	2
	TOTAL		17

400 LEVEL
SECOND SEMESTER

S/N	COURSE CODE	COURSE TITLE	COURSE UNIT
1	MCB 421	Petroleum Microbiology	3
2	MCB 422	Soil Microbiology	3
3	MCB 423	Microbiological Quality Assurance	2
4	MCB 425	Pathogenic Microbiology	3
5	MCB 426	Microbial Genetics	3
6	MCB 429	Research Project	6
	TOTAL		20

16.0

DESCRIPTION OF COURSES

MCB 210 INTRODUCTION TO MICROBIOLOGY (3 UNITS)

History of the science of Microbiology. Sterilization and disinfection; structure, ecology and reproduction of representative microbial genera. Cultivation of microorganisms. Isolation of microorganisms; isolation of bacteria, viruses.

MCB 220 GENERAL MICROBIOLOGY (3UNITS)

Nutrition and biochemical activities of Microorganisms. Antigens and antibodies. Identification and economic importance of selected microbial groups. Microbial variation and heredity.

MCB 227 BASIC TECHNIQUES IN MICROBIOLOGY (2 UNITS)

Culturing of microorganisms; preparation of media for microbial growth. Isolation of pure Culture; streaking, pour plates etc. sub-culturing procedures. Staining techniques for differentiation of microorganisms, direct and indirect procedures. Identification of Microorganisms to include colonial and cellular morphology and biochemical procedures.

MCB 310 MICROBIAL PHYSIOLOGY AND METABOLISM: (3 UNITS)

Dynamics of growth. Nutrition and energy metabolism of microorganisms. Effect of physical and chemical factors on growth. Biochemistry of various microbial processes such as transport, regulation and respiration. Biosynthesis of microbial products. Buffer preparation and standardization. Basic separation techniques in microbiology, dialysis, salting out, gel filtration, electrophoresis etc. Assay techniques for various metabolites including microbial enzymes, acids etc.

MCB 311 BIODETERIORATION (2 UNITS)

Principles of microbial deterioration of materials subject to microbial deterioration: Foods, Jet fuels, paper, paints, textiles and leather, metals etc. Factors favoring deterioration of materials. Major microbial groups involved in deterioration. Impact of processing and new technologies on biodeterioration. Biodeterioration Control.

MCB 312 MICROBIAL ECOLOGY (3 UNITS)

Microbes and ecological theory. Physiological and genetic adaptations of microorganisms to their environment. Microbial interactions; microorganisms in nature ecosystems. The life of microorganisms in air, springs, rivers, lakes and seas. Cycling of elements in water and sediments.

MCB 313 FOOD MICROBIOLOGY (3 UNITS)

The distribution, role and significance of microorganisms in food; intrinsic and extrinsic parameters of foods that affect microbial growth, food spoilage and food borne diseases. Microorganism. Indices of food sanitary growth and food microbiology standards. Disease of animal transmittable to man via food products,

MCB 314 IMMUNOLOGY (3 UNITS)

Introduction, Historical background, Innate and acquired immunity, Antigens antibodies, cellular immunity, Immunological tolerance and suppression, Surgical grafting. Complement system. Hypersensitivity. Immunological anomalies. Diagnostic

immunology, vaccines, effector systems of parasite killing and nature of resistance in plants.

MCI 315 MYCOLOGY (3 UNITS)

Structure, reproduction and classification of pathogenic Fungai. Laboratory methods of study. Pathology and immunology of superficial, subcutaneous, systemic mycoses, and actinomycosis. Laboratory practical will be designed to acquaint the students with techniques for Isolation and characterization of pathogenic Fungai, collection of clinical specimens.

MCB 316 BACTERIA DIVERSITY (3 UNITS)

The morphology, life cycle and biochemical characteristics of bacteria. Systematic study of bacteria and other prokaryotes, their nature, characteristics, identification and isolation.

MCB 328 INDUSTRIAL ATTACHMENT (6UNITS) (3 MONTHS)

Students will be posted to industrial establishments such as food processing, brewing, distillery, pharmaceutical, research institutes or medical and health institutions. A report to be submitted for grading.

MCB 411 ENVIRONMENTAL MICROBIOLOGY (3 UNITS)

Impact assessment of microbial contamination of soil, water and air in relation to the deterioration of the environment. Soil air and water pollution. Waste disposal and management. Methods of water and sewage treatment with emphasis on specific microorganisms involved. Disease transmission by water. Biological and Chemical Oxygen.

MCB 413 INDUSTRIAL MICROBIOLOGY (3 UNITS)

Fermentation system; design and use of fermenters. Microorganisms of industrial importance. Classification of microorganisms of industrial importance. Classification of microbial products by use. Relationship between primary and secondary metabolism; characteristics, sources and strain improvement of industrial microorganisms. Microbial growth and product formation in industrial processes, media for industrial fermentations. Foaming, major products of industrial microbiology: enzyme production and immobilization; production of vitamins, amino acids, antibiotics, organic acids, beer and wine.

MCB 414 PHARMACEUTICAL MICROBIOLOGY (3UNITS)

Concepts of growth and death in microorganisms. The chemistry of synthetic chemotherapeutic agents and antibiotics. Production and synthesis of antibiotics and antiseptics. Sensitivity and resistance as related to microbial physiology. Microbiological quality control in the pharmaceutical industry.

MCB 415 VIROLOGY & TISSUE CULTURE (3 UNITS)

Basic properties of viruses; classification of viruses. Viruses pathogenic to man and animals with emphasis on virulence, type of diseases produced, and methods of control. The bacteriophage will be used in some of the laboratory practical's to demonstrate the characteristics of the viruses. Representative animal viruses will also be studied in the laboratory to demonstrate the nature of viral virulence, Methods of viral cultivation and identification with special reference to tissue culture techniques will be introduced,

MCB 416 PRINCIPLES OF EPIDEMIOLOGY PUBLIC MICROBIOLOGY (3UNITS)

Statistical applications to epidemiology. Nature of epidemiological investigations. Spectrum of infections. Herd immunity. Latency of infections. Multifactorial systems in epidemics. Zoonoses. Antigenic drifts. Biological products for immunization. Schedules for international control of infectious diseases.

MCB 419 SEMINAR (2 UNITS)

A critical review of literature in area of the student's interest. The assessment of performance is carried out by a panel constituted by the department and is based on content, bibliography and technique of referencing, style and effectiveness of delivery, the ability to discuss and answer questions. The course is aimed at grooming the student on the preparation and delivery of seminar papers.

MCB 421 PETROLEUM MICROBIOLOGY (3UNITS)

Biogenesis of fossil fuels with emphasis on the role of microorganisms. Petroleum prospecting and secondary recovery. Microbial corrosion of pipes and equipment. Microbial corrosion of pipes and equipment. Methanogenesis and methanotroph. Effects of oil spill on microbial activities in aquatic and terrestrial ecosystems. Biodeterioration and biotransformation of hydrocarbons.

MCB 422 SOIL MICROBIOLOGY (3 UNITS)

The characteristics of soil environment; microbial flora and fauna of soil; microbial

activities in soil. Nitrogen cycle, mineral transformation by microorganisms. Ecological relationship among soil pathogens. Effect of pesticides on soil microorganisms. Biodegradation and biofuel generation. Microbiology of the rhizosphere.

MCB 423 MICROBIOLOGICAL QUALITY ASSURANCE (2 UNITS)

A theoretical and practical consideration of the management of microbiological quality assurance. HACCP, cleaning and sanitation. Microbiological specifications and regulations. Local and international approaches to obtain safe food. Management and quality assurance in the laboratory.

MCB 425 PATHOGENIC MICROBIOLOGY (3UNITS)

Study of some microbial pathogens of plants and animals with emphasis on those prevalent in Nigeria. The Geographical distribution, isolation, identification, morphology, life cycle, source of infection, transmission and the host. Ecology, clinical manifestations of specific bacterial, viral and fungal pathogens of man.

MCB 426 MICROBIAL GENETICS (3 UNITS)

Principles of genetic analysis Plasmids and transposable genetic elements, mutagenesis and DNA repairs, bacteriophage genetics and genetics of Nitrogen fixation. Mechanism and nature of mutation, induction, isolation and characterization of mutants. Genetic recombination in prokaryotes including transformation, transduction, phage conversion and conjugation. Recent techniques in microbial genetics. Chemical coding and expression of genetic information. Fungal genetics, Principles and applications of genetic engineering.

MCB 429 RESEARCH PROJECT (6 UNITS)

Students will carry out detailed research investigations under the supervision of lecturers in any area of interest in microbiology of their interest, write up project reports and be examined by external and internal examiners in oral examinations.

17.0 General Guidelines for conducting a Research Project

- a. A thorough literature review on what has been done in the project general/specific areas to enable identification of new problem area(s). Formulation of the research project: the problem, the purpose and the procedure (materials and methods).
- b. Detailing (in advance) all practical methods with a view to identifying materials and equipment needs to enable their successful and timely acquisition.
- c. On-the moment recording of all practical procedure, observations and results (both positive and negative) directly into the project record book. Don't record on rough paper!
- d. Careful practical is crucial towards obtaining reliable positive and negative results and in rationalizing these results.
- e. Above all, no cooking of results! Put it down as it is.
- f. The project write-up (or thesis) is done in the third person and in one tense (either

present or past). The project report should be structured and ordered as outlined b

A. Preliminary Pages:

i. Cover Page (front):

Title of Work (single line spacing)

Name of Student/Reg. No)

Name of Department/University (single line spacing)

ii. Title Page (inside):

Title of work

Name of Student/Reg. No.

Statement of Degree Requirement (single line spacing)

Name of Supervisor Date (month/year)

Approval Page

Dedication Page

Acknowledgment

Table of Contents

Abstract

List of Table and Figures (separate if any)

B. Body of the Project Report

- i. **Chapter One (introduction)** a review of the science of the project area leading to the project aims and objectives.
- ii. **Chapter Two (Literature Review)** a review of previous works in the area
- iii. **Chapter Three (Materials and methods)**
- iv. **Chapter Four (Results)**
- v. **Chapter Five (Discussion, Conclusion and Recommendation)**
- vi. **References**
- vii. **Appendix**

Examples:

- i. Title Page: The page shows the title of the project, Researcher's name, Registration Number, the degree for which the project was carried out, Faculty, University and Date.
- ii. Declaration Page: The page should contain the following: I hereby declare that this research project has not been previously presented either wholly or partly for the award of any degree in any University or higher Institution in Nigeria.

.....
Name of Student

.....
Signature of Student

Date

Students should appreciate the -legal and moral implication of the above declaration.

iii. Certification Page: This should contain the following:

We, the undersigned, certify and approve that the research in scope and quality satisfies the requirements in partial fulfillment for the award of B.Sc. Degree in Microbiology of Caritas University, Amorji-Nike, Enugu State. Nigeria.

.....

Name of Project Supervisor

Signature and Date

.....

.....

Name:

Signature and Date

Head of Department

.....

.....

Name of

Signature and Date

External Examiner

iv. Dedication Page: This is optional.

v. Acknowledgment: The researcher here acknowledges the assistance and aids received from individuals, group and agencies etc., it should not normally exceed one page, Name and date at the end of the acknowledgment.

vi. Table of Contents: This should contain the preliminary pages and abstract in Roman Numeral and the different chapters with their titles and subtitle and reference in serial order.

vii. Abstract: This is a brief description of the research problem, the study, and the key findings.

viii. References: Insert reference numbers as super scripts in the text. Assemble the references according to the numbering using the following format:

- a. Book source: Author's Surname, initials (year), publisher, Edition, Pages
- b. Journal/Article: Author's Surname, initials (year), "article" Journal, Volume, Number, Page.

Notes on Typesetting of Project Report:

- i. Font size: 12 points
- ii. Spacing: Double
- iii. Paper size; A4
- iv. Margins: Left (1.5 inch), Top, Bottom and Right (1 inch each).

SUBMISSION OF PROJECT

The student is required to submit on completion, four copies of the research project to the coordinator.

18.0 ESSENTIALS OF A GOOD SEMINAR

a. Guiding Principle

The guiding principle in the preparation and presentation of a seminar should be to inform and educate your audience. In this exercise therefore you are a teacher and your audience (including your lecturers) are your students.

b. Selection of Seminar Topic

First select a subject. Then zoom in on the subject to select the seminar topic. The shorter the time allowed, the narrower the topic should be. In this way, concreteness and depth will be ensured and generalization and shallowness have eschewed.

c. Seminar Write-Up

Write a treatise (a comprehensive exposition) on the topic along specific headings and sub-headings. Provide adequate illustrations. A well-written and rehearsed treatise is pre-requisite for a smooth and knowledgeable presentation.

d. Seminar Abstract

The abstract should contain the essential elements of the treatise. It should be a concrete and concise reflection of the topic—a condensed version. The outline of the seminar should not be included in the abstract.

e. Seminar Slides (or Posters)

- i. Slides are the corner stones of your talk; so, they should be carefully prepared to aid your memory and to facilitate the understanding of materials by the audience.
- ii. A slide on an aspect of the topic should contain only the points for expatiation. There should be no more than 6-8 lines of information on a slide. Use a second slide rather than crowding everything on one slide.
- iii. Diagrams, figures and tables should be simple to ensure understanding in seconds
- iv. For a 15-20 minutes talk, prepare about five slides.

f. Presentation

- i. Start your seminar with a slide showing the outline of your talk. Neither read nor comment on your abstract. it is already circulated to the audience to read.
- ii. Your hour seminar should be delivered as a running commentary on your slides
- iii. Present the slides in an orderly and smoot fashion introducing each slide so as to maintain continuity
- iv. Conclude your seminar with what you consider the essence or purport of your talk.
- v. The most un-interesting seminar is one that is read from a manuscript.

