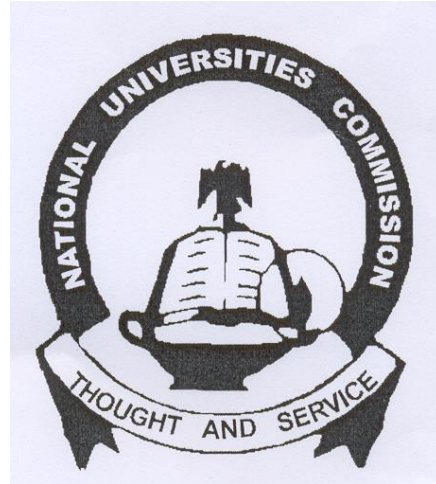


NATIONAL UNIVERSITIES COMMISSION



BENCHMARK MINIMUM ACADEMIC STANDARDS

FOR POSTGRADUATE PROGRAMMES IN

ENVIRONMENTAL SCIENCES

IN

NIGERIAN UNIVERSITIES

**NATIONAL UNIVERSITIES COMMISSION
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PREFACE

A major function of the National Universities Commission is quality assurance. The Education (National Minimum Standards and Establishment of Institution) (Act) No. 16 of 1985 as amended by National Universities Commission (Amendment) (Act) No. 49 of 1988 empowers the Commission to lay down minimum standards for all degrees, awards and use the same standards to accredit them. The Commission, in collaboration with the universities, developed the first set of Minimum Academic Standards for the undergraduate degree programmes under the thirteen disciplines taught in all Nigerian Universities. The documents were approved by the Federal Government in 1989 and became major reference instrument for the establishment and accreditation of all undergraduate academic programmes.

After over a decade of use, the National Universities Commission commenced the process of review of the Minimum Academic Standards in 2001. The review sought to accommodate new frontiers of knowledge in all the academic disciplines, the impact of information and communication technologies and inclusion of languages and entrepreneurial studies to ensure response to current realities, global competitiveness and relevance. The documents also enunciated the Benchmarks for Learning Outcomes and Competencies expected of the graduates, making the standards not only content-based but also result-oriented.

With the success recorded in the development and use of Benchmark Minimum Academic Standards (BMAS) for undergraduate programmes, the Commission proceeded to establish the standards for postgraduate programmes. This started with a meeting of the Provosts and Deans of Postgraduate Studies in all Nigerian Universities, in 2004. The process was followed by a Needs Assessment Survey. The purpose was to determine the Expected Learning Outcomes, Entrepreneurial Skills and Competencies in Research and Developed in the same year. The first workshop was held in 2005 to produce BMAS for Master of Business Administration (MBA); as the pilot. The final product was approved in 2006 and has since been used to accredit the MBA programmes in all universities.

The experiences encouraged the Commission to convene the next workshop to develop the BMAS documents for all the other programmes. This was towards the end of 2006 and the drafts produced were sent to all universities for their comments and inputs. The comments and inputs generated were incorporated into the draft at another workshop held in 2008. The final workshop on the production of error-free documents was convened in 2009 and 2010, when academic experts took yet another look at the documents, and any programme that was omitted was included. Finally, in 2011 the drafts were subjected to editorial scrutiny of experts so as to prepare them for printing.

Although the process had been long and arduous, the Commission is delighted to present the first set of postgraduate BMAS for all identified postgraduate programmes taught in Nigerian Universities for learning and accreditation of the programmes.

On behalf of the National Universities Commission, I wish to express sincere gratitude to all the Nigerian Universities and their staff who participated in the development of these documents.

PROFESSOR JULIUS A. OKOJIE
EXECUTIVE SECRETARY
NUC, ABUJA. November, 2011

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BENCHMARK MINIMUM ACADEMIC STANDARDS (BMAS) FOR POSTGRADUATE PROGRAMMES OFFERED IN ENVIRONMENTAL SCIENCES/STUDIES DISCIPLINES IN NIGERIAN UNIVERSITIES

A INTRODUCTION

The National Universities Commission (NUC), as a regulatory agency for University Education in Nigeria, has as one of its mandates, the definition and maintenance of academic standards. The Commission has, in the past, organized the definition of Minimum Academic Standards and subsequently accreditation for all approved undergraduate programmes offered in Nigerian Universities. As a follow up to the success recorded in the undergraduate programmes, the commission has embarked on defining benchmarks and minimum academic standards for postgraduate programmes in Nigeria. This proposal on Benchmark Minimum Academic Standards (BMAS) for the Postgraduate programmes in Environmental Sciences/ Studies Disciplines has been put in place for future accreditation of all postgraduate programmes offered in Nigerian Universities. The Benchmark statements contained herein, describe the minimum requirements each university is to attain. Individual universities may modify them, provided they do not go below the minimum benchmark herein specified.

B. POSTGRADUATE PROGRAMMES IN THE ENVIRONMENTAL SCIENCES/STUDIES DISCIPLINES

The following are the programmes in the Environmental Sciences/ Studies Disciplines, which are recognized by the National Universities Commission (NUC):

1. Architecture
2. Building
3. Environmental Management and Control
4. Estate Management
5. Fine and Applied Arts
6. Quantity Surveying
7. Surveying and Geoinformatics
8. Urban and Regional Planning

C. PHILOSOPHY

The philosophy of the Postgraduate programmes in the Environmental Sciences/ Studies is to provide a vehicle for the transformation of the physical and natural environment for human use and sustainable development.

To realize this philosophy the programmes seek to develop highly skilled professionals for the public, private and international organizations.

1. ARCHITECTURE

1.0 POSTGRADUATE PROGRAMMES IN ARCHITECTURE

1.1 Introduction

Architecture is an Art and a Science embracing the design of the built environment. The problems are challenging whether we are concerned with the creation of a single building or the planning of an entire city. When architects, planners and policy makers develop large-scale projects or alter the use of public spaces, they become agents of social as well as physical change. Whether or not they are prepared for these sorts of responsibilities, their decisions cross-traditional professional boundaries to involve a wide range of people and issues. This situation poses a challenge to the architectural professional and therefore there is a need to design a curriculum to confront these challenges.

The intent of the new graduate curriculum is to provide the educational environment where the graduate of architecture at the highest level will acquire the necessary knowledge and research skill to address the problems in the field of Architecture.

1.2 BENCHMARK/MINIMUM ACADEMIC STANDARDS FOR ARCHITECTURE PROGRAMMES IN NIGERIAN UNIVERSITIES

The Benchmark statements contained herein, describe the minimum requirements each university is to attain. Individual universities may modify them provided they do not go below the minimum benchmark herein specified.

a) **Philosophy**

The philosophy of the Postgraduate Architecture programme is to develop highly skilled professional architects for public, private and international organizations, and well rounded intellectuals for academic and social development.

b) **Aim:**

The aim is to produce architects with professional and intellectual capabilities to contribute meaningfully to architectural development in addressing the dynamic built environment and its challenges.

c) **Objectives:**

The specific objectives of the Postgraduate Architecture degree programmes in achieving the above aim are:

- i) to provide students with knowledge and skills to enhance their performance and to enable them to assume broader responsibility in the rapidly changing built environment in Nigeria;
- ii) to provide the knowledge required for understanding the practical analysis of problems related to the built environment;
- iii) to produce Architects who are capable of applying appropriate problem-solving principles and techniques in the Nigerian Built Environment;
- iv) to produce interested individuals with the necessary competence and skills to function effectively as academics in Architectural studies;

- v) to produce graduates in Architecture who will have opportunities for teaching and research in Schools of Architecture and research institutions.
- vi) to produce highly skilled architects capable of facing a broad spectrum of challenges in the built environment in Nigeria, in particular, and with adequate professional and intellectual knowledge of the global situations in general.
- vii) to produce needed research personnel for in-depth study and development of locally available building materials for achieving affordable housing for the teeming population.
- viii) Each university postgraduate Architecture programme should tailor her own philosophy, aim and objectives as dictated by peculiar factors surrounding their location and vision of their university towards achieving her mission.

1.3 Expectations

The students are expected to be conversant with research in design theory, human behaviour patterns and perception, as well as building science and technology. The programmes are ultimately expected to:

- i. produce creative and competent professionals who are capable of meeting the challenges of creating comfortable human environments;
- ii. explore the rich cultural, traditional and locally available resources and technologies of the country, and adapting them to efficient and effective use;
- iii. provide an educational process which recognizes, and is sensitive to human needs and the wise use and conservation of resources;
- iv. provide a comprehensive education such that the graduate is able to plan, design, build, commission, maintain and coordinate the allied professional inputs in the development of the human environment and
- v. provide an educational structure that is flexible and able to meet the changing needs of the users of the built environment.

1.4 LEARNING OUTCOMES FOR ENVIRONMENTAL SCIENCES/STUDIES PROGRAMMES

Comprehensive Knowledge of Areas of Specialization

Graduates should have a comprehensive knowledge of their areas of specialization, embodying an understanding of the theoretical foundations and quantitative tools of the areas of specialization, as well as the ability to apply this knowledge to actual problems.

Problem solving capabilities

Graduates should be able to demonstrate problem solving capacity through lateral, critical, innovative and creative connections among diverse fields of study in analyzing problems.

Global Perspective

Graduates should have a global perspective, based on an understanding of both the domestic and global environments of the organization.

Communication competency

Graduates should be able to communicate effectively, both graphically in writing and orally in ways appropriate for a variety of objectives and audiences.

Ability to manage information

Graduates should have an understanding of advances in information technology and be able to effectively integrate the innovations in their decision-making processes.

Social responsibility

Graduates should understand and demonstrate the ethical considerations and environmental ramifications of their decisions.

Behavioural skills

Graduates should understand human behaviour in the built environment. They should:-

- Have the ability to utilize Leadership skills effectively
- Interact effectively in group situations
- Manage culturally diverse environments
- Help others develop their skills
- Resolve conflict effectively and act independently in low feedback environments.

1.5 PROGRAMMES AVAILABLE

The postgraduate programmes available in the Department of Architecture include:

1. Postgraduate Diploma in Architecture
2. Master of Science (M.Sc.) or Master of Technology (M.Tech.) – professional degree
3. Master of Architecture (M.Arch) – specialization in architecture – professional and academic programmes
4. Doctor of philosophy (Ph.D.) in Architecture

1.6 OBJECTIVES OF THE PROGRAMMES**a) The Postgraduate Diploma in Architecture (PGDArc)**

The Post Graduate Diploma (PGD) Programme in Architecture is designed as an abridged programme:

- i) For those graduates of bachelors' degrees in architecture who obtained less than the required minimum grade i.e second class lower division for admission into the master's programme.

- ii) For holders of the Higher National Diploma in Architecture, the PGD Arch is also meant to bridge the gap between the HND and the B.Sc or B.Tech in order to provide an opportunity for those graduates to gain admission into the master's programme.
- iii) For holders of Bachelor's Degree in allied professions such as Building, Quantity Surveying, Urban and Regional Planning etc. the PGD Arc provides an opportunity for those who will wish to acquire a working knowledge of the profession of architecture at the middle cadre level to expand and enrich the scope and frontiers of knowledge in their professions in order to strengthen their career standing. For such persons pursuit of the masters degree in architecture is not necessarily an option
- iv) It is also meant to provide an opportunity for advanced knowledge in those areas for those categories of personnel (who hold at least an OND in architecture with 10 years working experience) practicing at the middle cadre level in public or private sectors whose advancement at work is, otherwise, hampered or stultified due to limited qualifications in those areas of concern.

b) Master of Science/Master of Technology (M. Sc./M. Tech) Professional Degree

The M.sc or M. Tech is the professional degree in architecture and is the main requirement which makes the holder registerable and eligible to be licensed to practice the profession of architecture in Nigeria. The M.Sc/M. Tech in architecture as a professional degree, adequately prepares the holder for leadership roles in the building and construction industry and a broad spectrum of interactions in architectural practice and project management concern.

c) Master of Architecture (M.Arch) Post-Professional Degree

The M. Arch is a post-professional degree meant for holders of the M.Sc/M.Tech or their equivalent who wish to pursue higher qualifications with greater research orientation with the goal of taking up teaching and research careers at tertiary or research institutions.

d) The Doctor of Philosophy (Ph.D.)

The Doctor of Philosophy (Ph.D.) is the highest academic degree which is meant to generate new knowledge and to prepare holders for teaching and research careers in tertiary institutions or research establishments as well as to prepare the holders of the degree to play very important leadership roles in the academic areas.

1.7 Admission Requirements

1.7.1 The Postgraduate Diploma in Architecture (PGD,Arch.)

The following shall qualify for admission into the Postgraduate Diploma in Architecture:

- a) Candidates with third class honour's degrees or pass (minimum) or its equivalent from Nigerian or other recognized universities.

- b) Holders of the HND in architecture with a credit level pass from recognized polytechnics.
- c) Holders of the OND or its equivalent in recognized or accredited institutions with at least 10 years post graduation cognate experience.

1.7.2 Master of Science (M.Sc) or Master of Technology (M.Tech.)

The following shall qualify for the Master's Degree Programme:

- a) Candidates of Nigerian or other recognized universities, who have obtained the approved Bachelor's degree in architecture with at least a second class honours or its equivalent.
- b) Candidates with a third class honours or pass degrees in architecture (with 10 years post-graduate experience) with a cumulative Grade Point Average (CGPA) of not less than 3 on a five-point scale.
- c) Holders of HND or its equivalent from recognized or accredited institutions with 10 years post-graduate cognate experience.

In addition to the above qualification requirements, candidates shall be required to satisfy all other conditions stipulated by the Department, the Post-graduate school and Senate of the University concerned.

1.7.3 Master of Architecture (M.Arch.)

The following shall qualify for the Master of Architecture Programme:

- a) Graduates of Nigerian or other recognized universities who have obtained the first professional degree of Master of Science/Master of Technology or B. Arch or other recognized equivalent qualifications from other recognized institutions with a minimum CGPA of 3.0 on a 5.0 –point scale.
- b) In addition to the above qualifications, the candidate shall be required to satisfy all other conditions stipulated by the Department, Postgraduate school and Senate of the University.

1.7.4 Doctor of Philosophy (Ph.D) Degree by Coursework and Research

- a) A candidate with academic Master's degree in Architecture or M.Sc/M.Tech) in Architecture, with a cumulative Grade point Average (CGPA) of not less than 3.5 on 5 point scale or weighted average of 60% from a recognized university shall be eligible for admission into the Ph.D programme.

In addition to the above qualifications, candidates shall be required to satisfy all other conditions stipulated by the Department and the Postgraduate School of the University.

b) Ph.D by Research

Candidates with M. Arch or M. Phil with a minimum CGPA of 3.5 point scale, or their equivalent from recognized institutions shall be eligible to be admitted into the Ph.D purely by research

1.8 DURATION OF PROGRAMMES

1.8.1 Postgraduate Diploma in Architecture

- a) Full-time: minimum of four (4) semesters

1.8.2 Professional Master's Degree in Architecture (M.Sc/M.Tech) - Professional

- a) Full-time: minimum of four (4) semesters

1.8.3 Master of Architecture Degree (M.Arch.) – Post-professional

- a) Full-time: minimum of three (3) semesters

1.8.4 a) Doctor of Philosophy degree (P.hD) by Coursework and Research

- a) Full-time: minimum of eight (8) semesters

b) Doctor of Philosophy (Ph.D) by Research

- a) Full-time: minimum of six (6) semesters

1.8.5 Extension of Duration

Universities have the discretion to set the maximum duration for the above programmes beyond which permission of senate for extension becomes necessary. Similarly, duration for part-time students shall be subject to the extant university regulations on part time programmes.

1.9 Domain of programmes

The postgraduate architecture programmes shall be domicide in the Department of Architecture.

1.10 Student Enrolment

Enrolment for postgraduate degree programmes shall be subject to the carrying capacity of the department as determined by the NUC Benchmark Minimum Academic standard (BMAS)

1.11 REQUIREMENTS FOR GRADUATION

1.11.1 Postgraduate Diploma in Architecture

- i) To be eligible for the award of PGD a candidate must pass all the prescribed courses and have a CGPA of not less than 3.0 on 5 point scale, or a weighted average of 50%.

The table below shows the grade classification.

Cumulative Grade	Class of Diploma
4.50 – 5.00	Distinction
3.50 – 4.49	Credit
3.00 – 3.49	Pass
Below 3.00	Fail

- ii) A candidate must also satisfy all other conditions stipulated in the regulations of the Post graduate School of the university.

1.11.2 Master's Degree in Architecture (M.Sc/M.Tech.) – Professional

- i) To be eligible for the award of the Professional Master's Degree a candidate must pass all the prescribed courses and have a CGPA of not less than 3.0 on a 5 point scale, or a weighted average score average not less than 50%.
- ii) A candidate must also satisfy all other conditions stipulated in the regulations of the Post graduate School and senate of the university.

1.11.3 Master's Degree in Architecture (M.Arch.) - Professional

- i) To be eligible for the award of M.Arch Degree a candidate must pass all the prescribed courses and have a CGPA of not less than 3.5 on a 5 point scale or a weighted average not less than 60%.
- ii) A candidate must also satisfy all other conditions stipulated in the regulations of the Post graduate School and senate of the university.

1.11.4 Performance Rating of Unclassified Masters

- i) For the M.Sc/M.Tech degrees which are unclassified, the performance rating of the candidate shall only be determined by his/her final CGPA.
- ii) For the Ph.D degree by coursework and research, the performance rating of a candidate shall be determined by his final CGPA in the coursework as well as the quality of his written thesis and his performance at the oral examination.
- iii) For the Ph.D degree by research the candidate's performance shall be a combination of his performance at seminars as well as the quality of his written thesis and performance at the oral examination.

1.12 AREAS OF SPECIALIZATION AND PROGRAMMES OFFERED IN DEPARTMENTS OF ARCHITECTURE

1.12.1 Postgraduate Diploma in Architecture (PGDArch)

As a remedial programme, targeted at preparing the relevant candidate for admission into the professional Master's Degree. The PGDArc is designed without areas of specialization. However, as an abridged programme meant to help personnel in allied professions to acquire a working knowledge of architecture at the middle cadre level, the PGDArch may be tailored towards providing specific training linkages between architecture and those allied disciplines.

1.12.2 Master of Science/Master of Technology (M.Sc/M.Tech.)

The M.Sc/M.Tech as a professional degree is designed without areas of specialization.

1.12.3 Master of Architecture (M.Arch.) – Post professional Degree

The M.Arch has the following as areas of specialization:

- a. M.Arch (Landscape Design)
- b. M.Arch (Urban Design)
- c. M.Arch (Interior Design)
- d. M.Arch (Housing and Human Settlements)
- e. M.Arch (Industrial Buildings)
- f. M.Arch (Public and Institutional Buildings)
- g. M.Arch (Commercial Buildings)
- h. M.Arch (Sports and Creational Facilities)
- i. M.Arch (Health Facilities)
- j. M.Arch (Hotel Resorts and Hospitality Facilities)
- k. M.Arch (Computer Applications in Architecture)
- l. M.Arch (Architecture Science and Technology)
- m. M.Arch Urban and Environmental Planning)

1.12.4 The Ph.D Programme in Architecture: Areas of Specialization

Areas of Specialization

There are basically four broad areas of study from which prospective Ph.D students in architecture may make selections for purposes of individual specialization. These areas generally focus on and encourage developing a more comprehensive knowledge base for the discipline of architecture that seeks to meet the growing need for teachers, scholars and interdisciplinary researchers concerned with the built environment. The four areas of specialization include:

- (1) Architectural Technology
- (2) Behavioural architecture
- (3) Architectural history and Theory
- (4) Design and computation

It must be pointed out that the areas listed above and described hereunder circumscribe both immediate needs and long term vision for a doctoral programme in Architecture. The areas are designed to allow for flexibility, maneuverability and cross-fertilization of ideas within the programme with the goal of achieving ultimate sustainability. Both the supervisory staff strength in the programme as well as the faculty and equipment available must be adequate for the competent conduct and handling of the programme. In addition, the flexibility of the programme ought to permit the pooling of human resources together across the entire Faculty discipline of environmental sciences to sustain the proposed programme.

1.13 ACADEMIC REGULATIONS

1.13.1 Academic Session

An academic session consists of two semesters. Each semester normally comprises 12 weeks of teaching and two weeks of examinations.

1.13.2 Course Units system

All architecture postgraduate programmes shall be run on a course unit system. All courses should therefore be subdivided into more or less self-sufficient and logically consistent packages that are taught within a semester and examined at the end of that particular semester. Credit weights should be attached to each course.

1.13.3 Definition of Credit or Unit

One credit is equivalent to:

- i. 1 Contact hour of lecture/tutorial per week per semester of 15 weeks
- ii. 2 Contact hours of laboratory work per week per semester of 15 weeks
- iii. 3 Contact hours of studio work per week per semester of 15 weeks
- iv. 5 hours of workshop per week per semester of 15 weeks
- v. 1 week of fieldwork/attachment/IT/SIWES, etc

1.13.4 Minimum Credit Weighting Requirements for Postgraduate Programmes

The following shall be the total credit weight requirement for graduation in the various postgraduate programmes in the department of architecture:

- a) Postgraduate Diploma in Architecture (PGDArc) – four semesters – 48 credits
- b) Master of Science/ Master of Technology (M.Sc/M.Tech.) – four semesters – 54 credits
- c) Master of Architecture (M.Arch) – three semesters – 36 credits
- d) Doctor of philosophy (Ph.D) by course work and research – eight semesters – 72 credits
- e) Doctor of philosophy (Ph.D) by research – six semesters – 36 credits for holders of M. Arch/M.Phil.

For each programme, the total credit weighing will be structured in such a way as to permit an even speed across each semester over the minimum designated duration. A general structure of the distribution among the key course areas may be as suggested below:

STRUCTURE OF CREDIT WEIGHTING DISTRIBUTION

POSTGRADUATE DIPLOMA IN ARCHITECTURE

A.	CORE DESIGN COURSES	18	Credits
B.	CORE THEORY COURSES	12	Credits
C.	COGNATE/ELECTIVE COURSES	6	Credits
D.	FINAL PGD PROJECT	12	Credits
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TOTAL MINIMUM		48	Credit Units
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M.SC/M.TECH ARCHITECTURE – Professional

A.	CORE DESIGN COURSES	18	Credits
B.	CORE THEORY COURSES	18	Credits
C.	COGNATE/ELECTIVE COURSES	3	Credits
D.	RESEARCH METHODS	3	Credits
E.	FINAL M.SC DESIGN THESIS	12	Credits
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TOTAL MINIMUM		54	Credit Units
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M.SC/MASTER OF ARCHITECTURE (M.Arch.) Post - Professional

A.	CORE RESEARCH COURSES	9	Credits
B.	AREA OF SPECIALIZATION	18	Credits
C.	COGNATE/ELECTIVE COURSES	9	Credits
D.	FINAL M.Arch THESIS	12	Credits
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TOTAL MINIMUM		48	Credit Units
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PHD ARCHITECTURE by Coursework and Research.

A.	RESEARCH METHODOLOGY COURSES.		
	1. General Research methods Courses (2 Courses)	6	Credit Units
	2. Advanced Research Method Courses	6	Credit Units
	3. Architectural Research Methods (2 Courses)	6	“
B	COURSES IN AREA OF Specialization (6 – 9 Courses)	18	Credit Units
C.	CONGNATE COURSES (Related Areas) (3 – 5 Courses)	9	“
	Postgraduate Seminars (Minimum 3)	6	“
D.	RESEARCH AND DISSERTATION WORK		
	1. Fieldwork	6	“
	2. Supervised Dissertation Research	6	“
	4. Dissertation Write up	12	“
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TOTAL MINIMUM		72	Credit Units
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PH.D. ARCHITECTURE by Research.

A.	RESEARCH METHODOLOGY SEMINARS .		
1.	General Research methods Seminars (Minimum 1)	2	Credit Units
2.	Advanced Research Method Seminar (Minimum 1)	2	Credit Units
3.	Architectural Research Methods Seminar (Minimum 1)	2	“
B.	POSTGRADUATE SEMINARS (Minimum 3)	6	“
C.	RESEARCH AND DISSERTATION WORK		
1.	Fieldwork	6	“
2.	Supervised Dissertation Research	6	“
3.	Dissertation Write up	12	“
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TOTAL MINIMUM		36	Credit Units
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1.13.5 External Examiners system

The external examiner system shall be used in the final year of the graduate programme to assess final year courses and projects and to certify the overall performance of the graduating students, as well as the quality of their performance output.

1.14 COURSE OUTLINES I:

1.14.1 Postgraduate Diploma in Architecture

Course Outline

The Postgraduate Diploma Programme in Architectural Design and Practice shall comprise the following course units drawn from 4 basic modules in Architectural Education – namely: Design, Technology, Environmental Control, and Professional practice.

FIRST SEMESTER COMPULSORY COURSES

COURSE TITLE	CREDIT UNITS
Architectural Design Studio/Intro. to computer Aided Design	4
Building Economics	2
Building Systems & Services	2
Construction Technology 1	2
Building structures	2
Research Methodology	2
Building Maintenance & Re-Use	<u>2</u>
Total Credit Units	<u>16 Units</u>

SECOND SEMESTER COMPULSORY COURSES

COURSE TITLE	CREDIT UNITS
Architectural Design Studio/Intro. To Computer Aided Design	4
Introduction to Professional Practice & ethics	2
Construction Technology II	2
Project Report	4
Construction Management	<u>2</u>
Total Credit Units	<u>14 Units</u>

COURSE SYNOPSES

ARCHITECTURAL DESIGN STUDIO

- (Urban Design Option)
- to examine such fundamental aspects of designs such as physiological and structural social and symbolic concerns, various aspects of space – expressive, philosophical, form and fabric, contextual concerns, etc.
- relevant theoretical materials to be introduced through lectures are intended.
- to test and demonstrate – student’s ability in architectural design.

BUILDING ECONOMICS

This course is intended as an introduction into the economic environments in which the Architects practice. It will also look at major cost factors in the design and construction of buildings as well as costing techniques.

BUILDING SYSTEMS AND SERVICES

This course is offered, as a means of assisting the students understand the complex technical influences on architectural design. This course will seek to highlight the interfacing of building technologies – structural, constructional, and environmental systems, thus explaining the real nature of buildings as a complex system.

CONSTRUCTION TECHNOLOGY I

A general overview of the behaviour and performance of the building (fabric) materials as climate modifier and covering. A test of the level of knowledge in construction necessary for the design of some components of simple buildings – e.g. foundations, walls, floors and roofs.

CONSTRUCTION TECHNOLOGY II

Here the emphasis is in relation to acquisition of similar aspects of knowledge as Construction Technology especially as related to steel and wood.

BUILDING STRUCTURES

Overview of structural design – The behaviour of concrete, masonry and wooden structures under loads. This will include detailed studies of the behaviour of structural components.

The course in both semesters will aim at sharpening the students’ understanding of structural concepts by means of models.

INTRODUCTION TO PROFESSIONAL PRACTICE/ETHICS

Introduction to the general issues in Professional practice. These include professional ethics, responsibility and legal aspects of Architectural practice. Students are expected to be introduced to techniques of survey research, sampling investigation of research problems data, collection characterization and analysis.

CONSTRUCTION MANAGEMENT

The management of contracts, documents, and administration of small construction project sites.

BUILDING MAINTENANCE AND RE-USE

Study of the performance and the failure of buildings through the investigation of several buildings and series of problems associated with them. Restoration and Preservation of Historic Architectural Monuments.

PROJECT REPORT

Students are expected to carry out a well-researched essay in any area of interest within the confines of the curriculum structure and research interest of the Department in the second semester.

1.15 COURSE OUTLINE II

1.15.1 M.Sc./M.Tech (ARCHITECTURE)

COMPULSORY M.SC. 1 COURSES

Course Title	Credit Unit
Design Studio	6
Advanced Research Methodology	2
Quantities and Cost Planning	2
Advanced Building Construction	2
Advanced Structures & Architectural Form	2
Working Drawings & Specification Writing	2
Professional Practice and Ethics	2
Advanced Building Services & Environmental Control	2
Acoustics	2
Total	22

ELECTIVE COURSES

Housing Studies	2
Urban Design	2
Interior Design	2
Landscape Design	2
Photography	2
Industrial Design	2
Construction Management	2
Real Estate Management	2
Total	<u>16</u>

At least one elective course shall be taken subject to a maximum of four.

M.SC. II COMPULSORY COURSES

COURSE CODE	CREDIT UNIT
Design Thesis Seminars/Live Project	8
Design Thesis (Project)	12
Thesis Written Report	<u>4</u>
Total	<u>24</u>

1.15.2 COURSE SYNOPSES

ADVANCED STRUCTURES AND ARCHITECTURAL FORMS

Areas to be studied include the following:

- An introduction to the principles of structural aesthetics
- Relationship between structure and form
- Form as dictated by materials, technology and behaviour of structure

PROFESSIONAL PRACTICE AND ETHICS

PART 1: Contracts, Scale of Charges and Codes of Professional Conduct.

Form of Contract with quantities; and without quantities, arbitration procedure; duties, liability and relationship of employer, architects, professional conduct of NIA and ARCON; Conditions of engagement and scheme of professional charges.

PART II: Building law, regulations and byelaws:

Building Acts that apply to the Federal Republic of Nigeria: Town Planning Acts and Procedures in respect of all locations; easements; dilapidations; the duties of building inspectors, land surveyors, health inspectors, valuers, inspectors of factories and other administrators of building laws.

PART III: Working Drawings and Specification Writing:

- a. The drawing scale, building scale and detailing. Principles and types of working drawings. Organization and presentation of working drawings. Specifications on quality, quantity and types of materials to be used, methods of installation and quality of workmanship, maintenance and management of buildings. General conditions and warranties on the manufactured components, delivery of material samples, permits and orders.
- b. Two dimensional network analyses with critical path method (CPM) project time and cost, times/cost relations, project direct and indirect costs, analysis of CPM network for optimum time-cost programme.

QUANTITIES AND COST PLANNING

This course is concerned with principles and procedures for estimating building cost targets and careful identification of all necessary quantities in building for the preparation of bills of quantities. Several techniques are introduced which may be appropriate (such as use of unit, area, cube superficial storey enclosed and pricing of sections of work like excavation, concrete work block work, frames, carpentry, metalwork, finishing, painting

and decorating external works, roofing, iron mongery, and windows, plumbing and electrical installations.

It also includes general conditions of contract, building contract, exemption clauses on manufacturing components, delivery of material, samples, permits, warranties and job conditions.

NOTE: Each student will develop a project manual from any major design approved by the lecturer.

ADVANCED BUILDING SERVICES AND ENVIRONMENTAL CONTROL

PART 1

The main course will consist of the following broad subject areas: sources, type and quality of water, including demand, distribution and delivery into buildings; population, pressure, velocity calculations, water installation, storage, reticulation plumbing and sanitary systems, sewage and waste disposal, drainage and sewage treatment.

The course also covers fire protection and different types of prevention methods. It also deals with mechanical installation systems such as lifts, escalator, paternosters, elevators, duct and ductwork.

PART II

The second part of this course deals with environmental control systems such as acoustics and noise control, air-conditioning, lighting, refrigeration, heating and ventilation systems and pollution control methods.

ADVANCED BUILDING CONSTRUCTION

The course is designed to acquaint the student with the principles and techniques of construction in specialized buildings based on already acquired knowledge of the basic principles of building construction. Special and advanced area of construction and detailing will be emphasized. Through the course the student should be able to design structures that are sound in themselves, in terms of being stable, functional, well proportioned and being economically feasible. The course provides the student with the knowledge that will enable him establish the most efficient type and method of construction in any given construction problem.

In the practical aspect of the course, students will individually produce models of studied structures. They should be able to draw scale details of construction to make hidden details more explicit. Construction site visits and study visits of special structures is to be incorporated into the course to cover a period not less than eight contract hours. The course emphasizes the study of space structures meant to cover large spaces with minimal intermediate support.

LANDSCAPE DESIGN

Intensive and extensive grounding in plant morphology, planting design soft and hard landscape elements and relationship of buildings to their natural environment aimed at developing appreciation of natural and man-made landscape elements and their contribution to open space designs, neighborhood, urban and regional growth of the ambiance.

PHOTOGRAPHY AND REPROGRAPHIC PROCESSES

The course aims at exposing the students to the scientific techniques involved in creating static images from a chemical emulsion through media controlled mainly by two factors that measure speed and volume. The students are introduced to the benefits of the pictorial storage of information, analysis of such information and architectural communication through the photo process.

Practical work involves understanding the technical nature of the camera, development and uniting of exposed negatives using the enlarger in a darkroom setting.

INDUSTRIAL DESIGN

Major topics here include: ceramics, textile design, advertising, and book design and production.

Under ceramics the areas of consideration are:

- Hand built pottery and wheel thrown pottery
- Ceramic glazes and glazing materials

Under Textile design the main areas of concentration are:

- Patterning and textual values of fabrics using inks and dyes
- Methods for creating dyes, printed woven fabrics
- Dyed textiles, printed textiles and woven textile

Under Advertising, the areas to be considered are:

- Promotion of consumer goods
- Billboard and poster design
- Package and trade mark design
- Product advertising.
-

DESIGN STUDIO IV

Emphasis here is on evolving and developing more advanced design strategies and modes of graphic exploration and presentation. Students are expected to grapple with more advanced technical, social environmental aesthetics, as well as financial aspects of architectural problems in the course of evaluation of design in this studio. Particular emphasis is placed upon construction technology and detailing at more practical level of skill acquisition process at this studio.

URBAN DESIGN

This course is designed to provide an overview of the physical planning and design of urban areas in the modern western context. The student is introduced to the literature and provided with an understanding of the theories, principles processes and procedures of urban design. Specific application in a variety of functional categories such as housing central districts and other activity centres will be examined. Of particular emphases will be the relationship between building and transportation, land utilization, government policies aesthetic concerns, technological consideration, social and economic issues, including, the practicality or urban renewal and development.

The course also includes seminars and workshops on themes, which may be predetermined by the instructor and others, by the students with approval of the instructor. Examples of topics which may be considered under such themes include neo-traditional town planning, edge cites, sub urban design, future trends in urban design, art

in urban design, vernacular architecture, recent urban design theories, urban design practices, design review, etc.

INTERIOR DESIGN

Objectives of this course include the introduction of the students to the needs of an ordered interior or enclosed space. Vocabulary of design include: elements of arrangement, analysis of interior spaces and masses, space relationships and decoration, furniture, colour schemes, scale of interior space etc.

M. Sc. II Courses

DESIGN STUDIO (DESIGN THESIS SEMINARS AND LIVE PROJECT:

Specialized seminars on integrated building and physical environmental design (restoration, preservation, interiors, industrial), are incorporated and thus are an encounter with the varied and diversified nature of Architectural problems which one has to contend with within practice. This objective makes it imperative for design programme to be live and as varied as possible. A major scheme in form of a live project will be presented by the student at the end of the first semester (possibly tied to the expected Design Thesis Project).

DESIGN THESIS (PROJECT)

This is an opportunity for the student to work independently on an Architectural design project of his/her choice. Each candidate will be expected to demonstrate satisfactory expertise in the student's selected field.

THESIS WRITTEN PROJECT

The course aims at introducing the students into advanced methods of conducting research in the field of practical Architecture. The course leads to choice of topic usually the same topic on the subject matter, which is the design thesis of the student. The design thesis will be reviewed by a committee of the department for approval. The committee shall be responsible for stipulating the appropriate form and content of the thesis. A thesis is a test of the student's ability to formulate an Architectural problem and articulate a response in form of Architectural design. A student will also be expected to demonstrate his competence in synthesizing the physical, cultural, economic, political, and other issues appurtenant to the solution evolved.

1.16 COURSE OUTLINE III

1.16.1 THE MASTER OF ARCHITECTURE (M.ARCH)

Curriculum Structure (M.Arch.) as a post-professional degree offers students the opportunity to develop deeper skills in research usually as avenue to prepare them for careers in research institutions or organizations or for further study leading to the Ph.D in Architecture. Any one of Urban Design, Interior Designs, Landscape Design, Housing, Industrial Design Architecture/Science and Engineering or Architectural Computing may be chosen for specialized focus. Courses offered may thus be drawn from the same modules as in B.Sc./B.Tech., M.Sc./M.Tech. but with a circumscription of those areas of specialization listed. Details are shown below.

COMPULSORY COURSES

Courses offered in any of these areas are generally drawn from the same modules taken at B.Sc/B. Tech., M.Sc. or M.Tech. levels. These may be listed as shown in the groups below:

COURSES AND THEIR GROUPINGS

<i>Course Title</i>	<i>Units</i>
(Common and Compulsory Courses)	
Research Seminar	4
Research Methods	4
Field and Laboratory Studies	4
(HISTORY AND THEORY)	
History of the Nigerian Built Environment	3
Architectural Conservation and Restoration	3
Vernacular Architecture in Nigeria	3
History, Theory and Criticism in Architecture	3
(HOUSING AND URBAN STUDIES)	
Urbanization, Housing and Environment	3
Theoretical Issues in Housing	3
Housing Policy, Finance and Management	3
Housing Programme Design	3
Urban Upgrading, Informal Settlements and Community Initiatives	3
(ARCHITECTURAL DESIGN AND PRODUCTION)	
Facility Programming	3
Building and Environmental Evaluation	3
Built Form and Culture	3
The Social Production of the Built Environment	3
Qualitative Methods in Architecture	3
(ARCHITECTURAL SCIENCE)	
Active and Passive Energy in Building Design	3
Thermal Comfort in buildings	3
Ventilation and Air conditioning in Buildings	3
Natural and Artificial Lighting	3
Aerodynamics and Natural Ventilation	3
(ELECTIVES)	
Earth Construction Technology and Design	3
Building Design and Human Performance	3
Project Management and Evaluation	3
Urban Housing Design and Development	3
Energy in Architecture	3
Contemporary Architecture in Nigeria	3
Colonial Architecture and City Planning	3

Participatory Approaches in Design & Development	3
Health, Architecture and the City	3
Gender Issues in Architecture and urban Design	3
Housing for the Lowest Income Groups	3
African Aesthetics	3

16.2 Synopsis of Course for M.Arch.

Documentation, Conservation and Re-Use of Traditional Buildings

The development of the built environment in Nigeria, from traditional settlements to contemporary cities. A survey of the architectural “styles”: Traditional, Colonial, Vernacular, Popular and the rise of Modern and Postmodern Architecture.

Measurement and documentation of traditional buildings, problems and approaches to documentation, equipment and facilities for documentation. Survey and analysis of historic structures and procedures for documentation, diagnosis and treatment of building problems. Rehabilitation procedure and technology. Preventive conservation and maintenance of historic structures.

Survey and Analysis of Historic Areas

Methodology for analysis of historic areas. Economic and social consideration. Integration of historic areas with City-planning. Implications of planning regulations and other legal aspects. Presentation and analysis of Case Studies. Urban Conservation as a special case in Urban Renewal.

Contemporary Architecture in Nigeria

A survey of current buildings and the architecture culture in Nigeria. Origins of contemporary Architecture, and its relationship with the global or international trends in Architecture. Tropical Architecture, Its meaning and significance. Analysis of some instances of the phenomenon called Tropical Architecture.

Earth Construction Technology and Design

Earth as a building material, history of use and variations in use. Characteristics of earth. Soil suitability and Stabilization processes. Norms and standards. Construction and production methods. Design principles for building in earth.

Traditional Building Materials

Identification of traditional building materials and their uses in the construction of buildings. Characteristics of building materials: earth, stone, wood, metal and synthetic materials. Architectural surfaces.

Field Studies

Verification on the field of principles and methods of building conservation. Practice of measured drawings and identification of historic buildings and sites.

Project/Report or Long Essay

Two options are available to each candidate, a long essay or a project. The topic must be chosen within the scope of Architectural conservation, in theoretical, methodological and practical terms. This must be completed in one semester.

Architectural Design I & II

A subject of study is selected which constitutes the basis for a project in architectural design and which will be carried out in the semester. The scale of the project also challenges the candidate's ability in landscape, site planning and urban design.

Modern Architecture

A general survey of the historical phenomenon described as Modern Architecture. Its origin and history: Nineteenth-century Europe. Industrial Revolution and the relevant artistic movements immediately preceding the 20th century. Major Features and characteristics of Modern Architecture in Nigeria.

Building Design and Human Performance

The impact of thermal, visual and acoustic elements and air-quality on human comfort and productivity. Determination and analyses of human needs, and setting objectives for design which give them priority. Human responses to heat, light and sound, and interior design: objective comfort levels and subjective factors. The relationships between human activities or tasks and the optimum indoor environment required, and the building envelopes which create the interior spaces. "Sick buildings" and air quality control in interiors.

Building Materials in Nigeria

A survey of building materials in Nigeria: the local industry and importation. Problems of the local materials industry. The industrial environment: an overview. Building standards and building materials production. Effects of the materials on building production (e.g. housing). Bricks, roofing materials, cement, floor and wall finishes: market evaluation, production and cost. Paints as a special case of finishes: quality, market evaluation, production and cost.

Project Management and Evaluation

Project feasibility appraisal and evaluation. Administration of programmes and projects. Monitoring of progress and development. Public works contract management. Community-based projects: concept and experience: community participation, training and evaluation of community benefits.

Office Management and organization

The nature of Architectural Practice: production and management processes. The office and the production of drawings. Forms of practice and professional and legal implications. Types of group practice. The organization of office practice and personnel management. Project management and the organization of the practice. Record-keeping in the office, the problems of space and recent developments. Financial management: bookkeeping and accounts in small and large organizations.

Long Essay

Each candidate selects a topic of interest within the scope of the programme to undertake research and prepare a long essay in one semester on the subject.

Advanced Architectural Design Studios I and II

The objective of these courses is to create a forum in which to simulate design practice through projects of advanced quality, and to develop the ability to synthesize the

knowledge from theory into arriving at design solutions. The scale of projects must show great ability to manage space at the urban scale as well as at the level of the single building or building complexes.

Advanced Architectural Science

Acoustics and Lighting in buildings, focusing these in relation to building types on which they make specific demands. Analysis of lighting in buildings, natural and artificial, and the energy implications of lighting design. The acoustic properties of buildings: Materials and components. Analysis of and design approaches to specialized buildings: concert halls, cinemas and theatres.

Urban Design

City planning, the Modern Movement and Architecture Tradition, a review of 20th Century City Planning. Approaches to the analysis of cities: historical, theoretical, philosophical and practical. The main and recent concerns of urban Design. Approach to City-Planning in Nigeria. Problems of Urban Design in Nigeria (including Urban Housing and the challenge of Real Estate Development).

Facilities Programming

Programming in Architecture as a service performed by Architects, constituting a pre-design activity and, as an inherent part of the design process, constituting a research base for Design. Architectural Design as problem solving and the nature of the architectural problem. Programming processes. Tools and techniques of programming. Programme-design and presentation.

Advanced Components and Methods

Reviews of the state of the art in the industrialization of Building and Industrialized Systems Building. Application in the Building Industry in Nigeria. Problems and prospects for improved uses of Industrialized systems Building. Advanced technology in components and methods of construction.

Research Seminar

A seminar paper is prepared and presented by each candidate based on original research and in an area within the scope of architecture.

Project Administration and Control

Specification writing: principles, role and methods of specification writing. Characteristics: as part of the contract with quantities, and without quantities. Performance specification. The management process in contract administration. Tendering procedures and methods of contract award. Office organization and different forms of partnership. Management of the office.

Professional practice and Architectural Management

Regulations governing the practice of Architecture in Nigeria. Ethics and code of conduct. Responsibilities of Architects in the construction industry. Duties of other professionals in the industry. Building laws, Town Planning Regulations and Bye-Laws.

Design Seminar

Within the context of a chosen topic for design, candidates prepare programmes and present alternative concepts for the design, leading to the final project in the next semester. This is presented as a report in a seminar forum.

Design Dissertation

A chosen topic involving problem identification which leads to design would have been selected from the previous semester essentially this forms the design part of the seminar presented in that semester. The design is worked through from sketch Design to necessary details.

Advanced Building Services

Specialized mechanical services in Buildings: Lifts and Escalators. Air-conditioning in buildings: design considerations, and implications of mechanical systems or detailed construction. Economic considerations in planning for, air-conditioning and other mechanical services including cost-in-use.

Housing for special Needs

Identification of “Special Groups” and justification of specialized environments for housing. (The disabled, the aged and students” residential facilities are examples). Conceptual structures and concern in planning and design for special groups. Programming and evaluation of housing for identified groups.

Health Facilities Planning and Design

Objectives of health facilities. Types of facilities in relation to principles of healthcare: primary health Centre, General Hospital, Teaching hospital and Specialized healthcare. Programming and Evaluation of health facilities. Approaches in hospital planning and design, and their theoretical origins.

Urban housing Design and Development

Site-selection and standards setting: densities and plot division. Appropriate systems for services: setting criteria for selection and development. Definition of house-types and other building types within housing communities. Choice of building materials and construction systems. Community input in design and development.

Building and Environmental Evaluation

The development of Evaluation in Architecture: historical and theoretical origins. The link between Evaluation and Design processes in Environmental Design. Types of Evaluation; Technical, Functional/Spatial and Behavioural. Nature of data from Evaluation, and the obstacles to the wider uses of data from Evaluation in design. Trends in Evaluation practice and theory.

Computers in Architecture

A review of the uses of the computer in architectural design and practice. The potentials of the computer in Architecture. Trends in the development of the use of the computer in graphics and Data Bases. Computer-Aided Design.

Architectural Conservation and Restoration

Principles of Conservation. Criteria for identification of buildings of historic significance. Techniques of building survey, and recording of historic buildings and places. Social and economic considerations in building conservation.

Vernacular Architecture in Nigeria

A survey of local building traditions in Nigeria. Factors influencing forms of buildings and environments. Approaches to the analyses of Vernacular Architecture in Nigeria. Sources of influences on Vernacular Architecture.

Energy in Buildings

Energy conscious buildings. Definition and weaknesses in current theory, and methods of generating building design. Sources of energy consumption in buildings. Thermal comfort and energy use: analyses of design and buildings-in-use. Development of Base models. Energy and building types and the implication of alternative sources of energy in building design.

Research Methods

Research and the tools of research. Research planning and design, methodologies of Research Design: The Historical method, Descriptive survey, Analytical survey and the Experimental method. Research Report: style, format and readability.

Field and Laboratory Studies.

Practical work involving field studies and laboratory assignments. The aim is to expose candidates to methods of data-collection and analysis, and interaction with the real context of historical, social environmental and experimental studies.

Thesis

Candidates are expected to select topics, for the purpose of the thesis, which must be approved by the Board of the School of Postgraduate Studies. The thesis must make some contributions to knowledge within the area identified by the candidate.

Architectural Historiography

The rise of Architectural History: from the 18th Century to the 20th Century. The problematic relationship between Art history and Architectural history. The construction of Architectural histories and the issues contributing to their formation. The challenge of historical and geographical periodization: artistic styles and movements and the reigning categories of architectural canon. The role of publications in the formation and dissemination of the architectural body of knowledge. Historiography of "Nigerian Architecture".

History, Theory and Criticism in Architecture

The relationship between History, Theory and criticism in Architecture. The nature and history of Architectural theory from the Western tradition. Sources of Architectural theory. The social ecology of Architecture and its effects on Architectural practice, theory, construction and criticism. The nature of criticism in Architecture, its role and concerns. Types and contexts of criticism.

Urbanization, Housing and Environment

Urbanization in developing countries: Scale and pace. A review of major changes in urban population in the last 100 years. The impact of urbanization on Housing and the urban environment. The links between urbanization processes, human shelter and environment, and the quality of the general urban environment. Human consequences of urbanization in developing countries. The management of urban centres. Case studies in developing countries.

Theoretical Issues in Housing

Housing and national Development. Housing, employment, community development and socio-economic changes. The role of Government in housing. Housing subsidies and Rent control. History of public housing in Nigeria. Sustainable Housing Policies.

Housing Policy, Finance and Management

Housing policy and development issues. Third world housing processes and housing policy. An overview of lessons from different countries. Lessons from the world bank and other international agencies. Formulating policies and assessing housing policies at local and national levels. Methods of housing supply and sources and methods of finance. Land tenure systems and the impact on housing policies and programmes institutional framework.

Housing Programme Design

Processes for devising housing strategy. Analysis of housing context: social, cultural and socio-economic analyses. Demographic analyses. The building industry: technology, materials and labour. Establishing target groups and planning for them. Environmental factors in housing.

Urban upgrading, Squatter Settlements and Community Initiatives

Devising a plan and a process. The place of upgrading in a balanced housing programme. Principle of upgrading. Necessary institutional framework. Pre-and post-implementation community involvement. The role of self-help. Organizing the local labour force. Squatter Settlements: problems, attitudes and approaches to housing and community improvements.

Built Form and Culture

General review of the factors, which influence built form. The relevance and relative importance of culture. Anthropological concepts in the analysis of built form. Physical and social analyses: obstacles to a comprehensive approach and some methods of overcoming these. Culture-change analysis. The context of the built form. Studies, largely but not exclusively, on domestic space. Regionalism in Architecture.

The Social Production of the Built Environment

Theory and methods in built form studies. A historical review of the development of the complex relationship of “players” in the building industry. Architecture and identity: social and individual. The development of the professional Architect and the community of Architects: expert knowledge and its development and the aesthetic question. The individual differences in Architects’ Architecture. The building process: division of labour and consequences for the built form. Power and Style in Architecture.

Qualitative Methods in Architecture

Approaches to theory building and data-generation in Architectural Design and Production, and the relevance of qualitative data. Quantitative and qualitative approaches as complementary tools. The qualitative approach in the context of the multi-method approach. Ethnographies and the phenomenological approach. The Integrated qualitative approach to Research Design.

Passive and active Energy in Building Design and Construction

A review of techniques for achieving physiological comfort in building interiors. Passive and active energy use in buildings: implication for design and planning of buildings and large-scale environments. State of the art in the use of solar energy in buildings. Environment-friendly buildings: meaning and theory.

Thermal Comfort in Buildings

Methods and processes, for the analyses of heat-gain and heat-loss in buildings are renewed. The implications of these for comfort-level maintenance. Components of buildings and their properties. Empirical methods of analyses of thermal comfort using models. Field Studies of thermal comfort. Problems of instrumentation in thermal comfort studies.

Artificial Ventilation and Air-conditioning

The course reviews different techniques of artificial ventilation of indoor spaces, for air-quality control and human comfort. Implications of types of air-conditioning systems for design and planning of single buildings and complexes. Airflow in ducts: theory and analyses. Comfort levels: meaning and implications for air-conditioning in the Tropics. Problems of air-conditioning in the Tropics.

Natural and Artificial Lighting

Advanced empirical methods of analyses and design of artificial and natural lighting. Factors influencing of the psychology of reaction to colours. Special application in specialized buildings: Museums and Libraries.

Aerodynamics and natural Ventilation

Airflow around buildings and the effects of wind-pressure on building structures and openings. Internal pressure, air-change and air-quality. Simulation of wind-effects on buildings (external and internal), and the empirical analysis of wind-effects and air-movement through buildings.

Contemporary Architecture in Nigeria

A survey of 20th century Architecture in Nigeria: origins and styles. Modern movements and modern Architecture in Nigeria. Tropical Architecture in Nigeria: origins and definition. Pioneers of modern Architecture in Nigeria and the Architecture of early British Architects. Trends and tendencies in more recent Architecture (from the mid-eighties to the present day).

Colonial Architecture and City-Planning

British Colonial Architecture, with emphasis on Nigeria, India, Australia and south Africa as places which exemplify a tradition. Architecture and urban Design of British colonial rule: the Architecture of a dominant power; products of culturally specific rules

with culturally different activities and preferences; the environment of industrial capitalism. A survey of the colonial City and Colonial buildings in Nigeria.

Participatory Approaches in Design and Development

The rationale for participatory processes and the alternatives to current processes of design and development. Theory and research in participatory design. Advocacy: a form of participatory planning. Crimes and trade-off in design and development. Participatory Action Research. Skills and techniques for participatory approaches to Design and Development.

The relationship between Architecture, health land environment: a socio-ecological model. Environmental stresses and supporters defined. The special case of the city. Environmental quality of cities in Nigeria. Methods of analysis and evaluation. The concept of healthy Cities. Environmental health and Architecture and urban design. Public Health Law in Nigeria. The Management of public Health. The hygiene of buildings: lighting ventilation, drainage and sewage/waste disposal. Housing as a special case. Pollution-control: noise, air-pollution, sewage and sewerage disposal. Refuse disposal planning and management.

Gender Issues in Architecture and Urban Design

A review of the growing literature on Gender and Environments. Rationale for the focus on gender issues in Architecture and Urban Design: profiles of discrimination. Women and environments: Spatial Dichotomies, Environmental fit, environmental Equity, and female principles in Architecture and Woman-made Spaces. Domestic space: Gender assumptions in modern housing design. Approaches to Gender Research in Architecture and Urban Design.

Housing for the Lowest-Income Groups

Establishing and defining target groups. Definition of the housing needs of target groups. Affordability and willingness to pay of target groups. Models of lowest-Cost housing:

1.17 Course Outline IV: Doctor of Philosophy (Ph.D) in Architecture

1.17.1 List of Areas of Specialization

1. Architectural Technology
2. Behavioural Architecture
3. History and Theory of Architecture and Human Settlements
4. Computer applications

1.17.2 Description of Areas of Specialization

Architectural Technology

Architectural Technology is an area of study that enquires into how buildings are made and how they are controlled in order for them to be able to attain optimal performance for hum comfort. Possible areas of further specialized research development may include: theory of perspectives in evolution and use of new materials, construction and building maintenance; structural and building systems integration and related data structures; artificial and natural lighting in buildings; acoustics and sound energy communication in buildings, heating, air-conditioning and refrigeration in buildings; electrical and mechanical installations and distribution in buildings, energy conservation (often)

supported by computer analysis. Also typical cognate courses in other related fields in the University will include heat transfer, thermal dynamics, meteorology and statistics.

Research knowledge acquired here is expected to be used in generating information that will help architects, builders and planners to plan, design and build buildings which are more sensitive to the dictates of the physical environments and respond more effectively to new materials and technology of construction for the comfort of users.

Behavioural Architecture

Behavioural studies in Architecture considers various interactions, which take place between people and their physical surrounds (within the context of urban and environments).

The people under consideration here include both individuals and groups of people, (together with their accompanying characteristics such as ethnicity, culture gender, age and other physical characteristics) which manage and use the environments. The urban and environments includes land uses such as housing, commerce, agriculture, institutional complexes and other open spaces, as well as transportation networks and work settings such as hospitals, schools, prisons, house of worship etc.

The focus of this area of study is on the way and manner in which people use, alter, respond to, and manipulate the buildings and other physical settings they occupy and work in and the behavioural/psychological impact such interactions have on the peoples well being, health, assessment of their preferences and needs, etc.

An understanding of all these issues (it is hoped) will be important to the advancement of architectural theory and practice and the formulation of public policy in the management of the built environment and a well orchestrated system of urban environmental planning of our otherwise unplanned cities in Nigeria.

Architectural History and Theory

The study of historical and theoretical issues in architecture is concerned with critically examining the trend of, and development of architecture from the earliest times to the present. It seeks to develop new knowledge and methods for the promotion of a critical inquiry and insight into the varied factors and influences that have shaped architecture generally and design decisions over time.

Historical inquiry involves undertaking a historical account of, and carrying out a critique of the intentions of the producers of buildings as well as the users in relation to the conditions and contexts of that time, including the constraints of their respective tasks and involvements.

The primary objective of this inquiry is to ascertain and assess the basis of documentary research, the actual contexts within which a given building ensemble or architectural phenomenon would have evolved in its time and place, as well as the context in which it would have experienced any subsequent changes over time. Areas of concentration may include eras and epochs in architectural development such as ancient renaissance baroque, rococo Byzantine, pre-industrial, modern postmodern, futurist etc as well as

specific history of traditional architecture of various human communities with emphasis on African traditional architecture.

Theoretical studies in architecture, on the other hand, include theory building, formulation of new constructs, interpretations and meaning in the built environment intended to describe and explain architecture. It also includes looking into factors affecting the design process and the views held by those involved with the production and use of designed environments. In addition, new methodologies and theoretical positions are grounded on a critical examination of past and present body of knowledge in various aspects of architectural discipline. These methodologies and theoretical positions may also be advanced for purposes of promulgating a new aesthetic or new genre of architectural production, or even for purpose of propounding a new conceptual framework for interpreting both past and contemporary works of architecture.

By examining and discriminating among the various methodologies and points of view that attempt to describe and explain our knowledge of architecture, students will become better equipped to determine the appropriate method or approach to be adopted in their own inquiry into the history and theory of architecture.

Specialization in the area of historical and theoretical studies in architecture is expected to prepare the individual for a productive academic career in teaching and conducting research in architectural history and theory, or for creative work in the architectural profession and/or in historic preservation.

Design and computation

Design and computation has to do with computers and computerization in Architecture and knowledge-based systems. It is an area of specialization in doctoral work in architecture concerned with generating the architect's own response to the all-important impact of information technology on physical developmental processes in the rapidly globalizing world. The idea here is the employment of computers as a new design thinking medium offering capabilities that can overcome some of the limitations encountered by human beings in the use of the traditional modes of thinking. It is an attempt at replacing human thought with the mechanization of information technology systems represented by the computer for purposes of solving architectural problems at the theoretical plane of planning conceptualization and practical realization of the physical processes. It involves the representation of the built environment or artifacts in a form capable of supporting the automated analysis and simulation of the environments performance.

Specific areas of concentration may include: design theory and methods and computer-aided applications. It further includes work in knowledge-based expert systems and approaches to graphics mapping and design that are complemented by cognitive studies of the way in which designers undertake specific tasks; computer-aided education, simulation, solids modeling, geometric modeling, interactive programming, knowledge-based design systems, and data base for design; facilities management systems based on interactive evaluation, graphic super computers and access to central computer facilities. These areas of specialization are not exhaustive and are merely an indication of a broad spectrum of fields of study in architecture. Related areas may be indicated depending on availability of supervisors.

2. BUILDING

2.0 POSTGRADUATE PROGRAMMES IN BUILDING

2.1 INTRODUCTION:

The areas of specialization most commonly offered at the master's level in the Building programme are as follows:

M.Sc/M.Tech (Building Structures)
M.Sc./M.Tech (Facilities Management)
M.Sc./M.Tech (Building Maintenance)
M.Sc./M.Tech. (Construction Management)
M.Sc./M.Tech. (Construction Technology)
M.Sc./M. Tech. (Building Services)
M.P.M. (Project Management)

Ph.D

Building Services
Building Structures
Facilities Management
Building Maintenance
Construction Management
Construction Technology

2.2 Objectives

While the main goal of the Master of Science or Master's of Technology degree in any of the building programmes remains: "to instill independence and originality of thought in the professional competence needed in the construction environment", there is the need to provide adequate growth in the main disciplines and techniques, and to develop such personal skill as would be of use in the planning and implementation of construction projects.

The objectives of the programmes remain:

- (i) To produce professionally trained high level managers, meeting the needs of construction industry, government establishments and institutions of higher learning.
- (ii) To produce graduates with the knowledge, skills and competence in research and development in construction management, materials technology and building services systems.
- (iii) To produce graduates with the skills in managing a construction company or department, organizing and direct its marketing, financing, estimating, personnel procurement, quality control and accounting functions.
- (iv) To produce graduates with the skills to estimate, bid, plan, schedule and manage a complete project at a profit.
- (v) To prepare students for a Ph.D or any other higher programme in construction technology, management and services.
- (vi) In general, to widen the opportunities for students' attainment of self-actualization in the building construction industry.

To do these, each course must address technical (engineering) and numerical techniques, develop personal and inter-personal skills, and provide a fundamental understanding of

the social economic, contractual and legal framework within which the construction project takes place. This should enable the graduate make an effective contribution to the growth of the whole enterprise and environments in which he/she will work. The content of each course must therefore take into consideration the dominant position of the Builder at every stage in the development of a construction project. Since the Builder will invariably occupy a position with responsibility for technical, financial and contractual decisions, and for the overall management and administration of the project, each course is aimed at satisfying these needs.

2.3 ADMISSION REQUIREMENTS

2.3.1 POSTGRADUATE DIPLOMA IN BUILDING

The following shall qualify for the Postgraduate Diploma in Building

- a) Candidates with third class honours degrees or their equivalent or postgraduate diploma in allied disciplines from Nigerian or other recognized universities.

2.3.2 PROFESSIONAL MASTERS' DEGREE PROGRAMMES IN BUILDING

The Professional Masters' degrees in Building are terminal. The following shall qualify for the professional Master's degree programme in Building:

- a) Graduates of Nigerian or other recognized universities who have obtained the approved Bachelors degree with at least second class honours or its equivalent;
- b) Candidates with a third class honours degrees or its equivalent and appropriate postgraduate diploma of Nigerian or other recognized Institutions with a weighted average of not less than 50%.
- c) Holders of the Nigerian Institute of Builders Professional Practice (NIOBPPE) Plus HND Upper Credit may be considered.

In addition to the above qualifications, candidates shall be required to satisfy all other conditions stipulated by the Department and the Postgraduate School of the University.

2.3.3 ACADEMIC MASTERS' DEGREE PROGRAMMES

Graduates of Nigerian or other recognized universities who have obtained the approved Bachelors degree with at least second class honours shall qualify for the Academic Master's programme;

In addition to the above qualification, candidates shall be required to satisfy all other conditions stipulated by the Department and the Postgraduate School of the University.

2.3.4 DOCTOR OF PHILOSOPHY (PH.D) DEGREE PROGRAMMES

A candidate with academic Master's degree (M.Sc) with a Weighted Average of not less than 60% or MPhil from a recognized university may be admitted into Ph.D programmes.

In addition to the above qualifications, candidates shall be required to satisfy all other conditions stipulated by the Department and the Postgraduate School of the University.

2.4 DURATION OF PROGRAMMES

2.4.1 Postgraduate Diploma

- a) Full-time: minimum of Three (3) semesters
- b) Part-time: minimum of Six (6) semesters

2.4.2 Professional Master Degree

- a) Full-time: minimum of three (3) semesters
- b) Part-time: minimum of six (6) semesters

2.4.3 Academic Master Degree

- a) Full-time: minimum of three (3) semesters
- b) Part-time: minimum of five (5) semesters

2.4.4 Master of Philosophy

- a) Full-time minimum of four (4) semesters

2.4.5 Doctor of Philosophy degree

- a) Full-time: minimum of six (6) semesters
- b) Part-time: minimum of eight (8) semesters

2.5 REQUIREMENTS FOR GRADUATION

2.5.1 Postgraduate Diploma

- i) In order to be eligible for the award of PGD a candidate must pass all the prescribed courses and have a weighted average not less than 50%.
- ii) A candidate must also satisfy all other conditions stipulated in the regulations of the Post graduate School.

2.5.2 Professional Master's Degree

- i) In order to be eligible for the award of Professional Masters Degree a candidate must pass all the prescribed courses and have a weighted average not less than 50%.
- ii) A candidate must also satisfy all other conditions stipulated in the regulations of the Post graduate School.

2.5.3 Academic Master's Degree

- i) In order to be eligible for the award of Professional Masters Degree a candidate must pass all the prescribed courses and have a weighted average not less than 50%.
- ii) A candidate must also satisfy all other conditions stipulated in the regulations of the Post graduate School.

2.5.4 Academic Masters Degree - MPhil

2.5.5 Doctor of Philosophy (Ph.D) Degree

- i) In order to be eligible for the award of Ph.D Degree a candidate must pass the prescribed coursework amounting to a minimum of six (6) units. In addition, the candidate must pass the oral examination with respect to the thesis including a Qualifying Examination and a final Oral Examination in accordance with the approved University Regulations.
- ii) A candidate must also satisfy all other conditions stipulated in the regulations of the Post graduate School.

2.6 EXAMINATIONS, GRADING, PROCEDURE AND RESULTS

2.6.1 EXAMINATION

- (a) In addition to continuous assessment final examinations shall be given for every course at the end of each semester.

The total scores obtainable for any course (continuous assessment and final examinations) is 100%. The total final examination scores would vary as follows from one course to another depending on the score of the continuous assessment of a course as explained in section 3.4 (ii)

Continuous Assessment	30	40	100
Final Examination	70	60	0
Total	100	100	100

- (b) Each course shall normally be completed and examined at the end of the semester in which it is offered.
- (c) A written examination shall normally last a minimum of one hour for one (1) unit course, and a course of 3 credit units shall have 3 hours of examination.

2.6.2 PASS MARK

The minimum pass mark in any course shall be 50%

2.6.3 GRADING SYSTEM

Grading of courses shall be done by a combination of percentage marks and letter grades translated into a graduated system of Grade Point Equivalents (GPE). For the purpose of determining a student's standing at the end of every semester, the Grade Point Average (GPA) system shall be used. The GPA is computed by dividing the total number of credit points (TCP) by the total number of units (TNU) for 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 Grade Point Equivalent of the marks scored in the course. Each course shall be graded out of a maximum of 100 marks and assigned appropriate Grade Point Equivalent as in the following table:

(i) credit unit	(ii) %scores	(iii) Letter Grades	(iv) Grade Points (GP)	(v) average (GPA)	(vi) (CGPA)	(vii) Class of Degree
Vary according to contact hours assigned to each course per week per semester, and according to load carried by students	70 – 100	A	5	Derived by multiplying I and IV and dividing by Total Credit Units	4.50– 5.00	Distinction
	50 – 69	B	4		2.40-4.49	Pass
	below 50	F	0		Below 2.40	Fail

2.6.4 PRESENTATION OF RESULTS

Results from the Postgraduate Schools' Board of Examiners shall be presented to Senate for approval.

2.6.5 RELEASE OF RESULTS

Results shall be released/published promptly after approval by the Senate.

2.7 DEGREE CLASSIFICATION

The determination of the degree shall be based on the Cumulative Grade Point Average (CGPA) earned at the end of the programme. The GPA is computed by dividing the total number of credit points (TCP) by the total number of credit units (TNU) for all the courses taken in the semester. The CGPA shall be used in the determination of the class of degree according to the following breakdown:

CUMULATIVE GRADE POINT AVERAGE (CGPA)	CLASS OF DEGREE
4.50 - 5.00	Distinction
3.00 - 4.49	Pass
Below 3.00	Fail

2.8 RESOURCE REQUIREMENTS FOR TEACHING AND LEARNING IN THE BUILDING PROGRAMME

2.8.1 ACADEMIC STAFF

(i) TEACHER TO STUDENT RATIO

The staff to student ratio for the Undergraduate Programme in Environmental Studies is 1:15. The general norm for resource requirements for the postgraduate to undergraduate programmes is 1:10. Hence for effective teaching and learning the M.Sc/M.Tech. programme shall have a teacher to student ratio of 1 to 10

(ii) ACADEMIC STAFF WORK-LOAD

With a minimum load of 18 credits for students and a minimum of six full-time equivalents to staff in each programme, staff should have a maximum of 15 contact hours per week for lectures, tutorials, term papers and supervision of projects. With a minimum load of 18 credits for students and a minimum of six (6) full-time equivalents to staff in each programme, staff should have a maximum of 15 contact hours per week for lectures, tutorials, term papers and supervision of projects.

(a) STAFFING

There should be a minimum of six full-time equivalents of staff on the ground in a department. At least, 75% of teaching of staff should have doctoral degrees as well as sufficient professional experience.

(b) STAFF MIX

The staff mix recommended for effective curriculum delivery in the Masters programme is 20:30:50, Professor/Reader: Senior Lecturer: others.

2.8.2 NON-ACADEMIC STAFF

The services of support staff, which are indispensable in the proper running of the programme as well as for administration, are required. It is important to recruit very competent senior technical staff to maintain teaching and research equipment. Universities should pay attention to optimum proportioning of the non-academic staff to avoid redundancy and overstaffing

- The ratio of non-academic staff to academic staff should be 1:4.
- Among the non-academic staff, the ratio of senior staff to junior staff should be 3:2.

2.8.3 COMPUTER LITERACY

With the computer age and application of information technology, both academic and non-academic staff should be computer literate.

2.8.4 ACADEMIC PHYSICAL SPACE AND EQUIPMENT REQUIREMENTS

i) Professional Physical Facilities Requirements

- a) Computer Room, including Virtual Library facilities.
- b) Board Room to enhance professional development.

ii) **Office Accommodation**

The standard space requirement as shown below shall apply.

Position/Rank	m²
Professor's Office	18.5
Head of Department's Office	18.5
Tutorial Teaching Staffs Officer	13.5
Other Teaching Staff Office Space	7.0
Technical Staff Office Space	7.0
Secretarial Office Space	7.0
Seminar Space/Per Student	1.85

iii) **Classroom Space and Examination Theatres**

- Adequate classrooms should be provided with enough chairs and tables.
- Examination halls and theatres should be provided to minimize the rate of examination malpractices.

iv) **Equipment**

For effective learning, the following equipment should be provided:

- Computers
- Photocopying Machines/video Cameras
- Tape Recorders
- Internet and e-mail facilities
- Audio Visual Aids/Multi-media

2.8.5 LIBRARY FACILITIES:

There must be adequate physical and virtual library facilities to cater for the interest of all the courses in the programmes. These include current journals, handbooks, textbooks, manuals, codes of practice, standards and specifications, etc.

2.9 LEARNING OUTCOMES FOR POSTGRADUATE PROGRAMMES IN BUILDING

Comprehensive Knowledge of Areas of Specialization

Graduates of postgraduate programmes in building should have a comprehensive knowledge of their areas of specialization, embodying an understanding of the theoretical foundations and quantitative tools of the areas of specialization, as well as the ability to apply this knowledge to actual problems.

Problem solving capabilities

Graduates of postgraduate programmes in building should be able to demonstrate problem solving capacity through lateral, critical, innovative and creative connections among diverse fields of study in analyzing problems.

Global Perspective

Graduates of postgraduate programmes in building should have a global perspective, based on an understanding of both the domestic and global environments of the organization.

Communication competency

Graduates of postgraduate programmes in building should be able to communicate effectively both graphically, in writing and orally in ways appropriate for a variety of objectives and audiences.

Ability to manage information

Graduates of postgraduate programmes in building should have an understanding of advances in information technology and be able to effectively integrate the innovations in their decision-making processes.

Social responsibility

Graduates of postgraduate programmes in building should understand and demonstrate the ethical considerations and environmental ramifications of their decisions.

Behavioural skills

Graduates of postgraduate programmes in building should understand human behaviour in the built environment. They should:-

- Have the ability to utilize leadership skills effectively
- Interact effectively in group situations
- Manage culturally diverse environments
- Help others develop their skills
- Resolve conflict effectively and act independently in low feedback environments.

2.10 DOMAIN OF PROGRAMME

The Postgraduate Building programmes shall be domiciled in the Department of Building.

2.11 STUDENT ENROLMENT

- i) Enrolment for professional degree programmes shall be subject to the carrying capacity of the Department.
- ii) Enrolment for Academic degree programmes shall be subject to the carrying capacity of the Department but not more than 20% of the undergraduate enrolment of the Department.

2.12 ACADEMIC STANDARDS

The academic standards for the postgraduate building programme shall include the following:

2.13 ACADEMIC REGULATIONS**2.13.1 ACADEMIC SESSION**

An academic session consists of two semesters. Each semester normally comprises 15 weeks of teaching and two weeks of examinations.

2.13.2 MODULAR SYSTEM

All Building postgraduate programmes shall be run on a modular system, commonly referred to as course system. All courses should therefore be sub-divided into more or

less self-sufficient and logically consistent packages that are taught within a semester and examined at the end of that particular semester. Credit weights should be attached to each course.

2.13.3 DEFINITION OF CREDIT OR UNIT:

Credits are weights attached to a course. One credit is equivalent to one contact hour per week per semester of 15 weeks of lectures or tutorials, or three (3) hours per week of term paper, studio or practicals per semester of 15 weeks.

2.14 PROGRAMME REQUIREMENTS

2.14.1 REGISTRATION PROCEDURE

Registration of courses closes not later than the end of the third full week of the semester. A student can withdraw from the course without penalty any time up to, and including the fifth week into the semester. Any student who withdraws after the seventh week will be deemed to have failed, except, in special cases as may be approved by the Post graduate School on the recommendation of the Head of Department.

2.14.2 STUDENTS ACADEMIC STATUS

A student's academic status shall be determined on the basis of his/her performance at the end of the semester examinations. The following categorization shall be used:

i) **Good Standing**

To be in good standing, a student must in each semester have a Cumulative Grade Point Average (CGPA) of not less than 3.0.

ii) **Probation**

A student whose weighted average is less than 50% or whose CGPA is below 3.0 at the end of a particular semester shall be placed on probation for one academic session. Such a student shall be allowed to register for courses at the next higher level in addition to his/her probation level courses provided that the total number of courses that he/she has shall not exceed 15 credit units per session in addition to the following:

- a) the regulation in respect of the student work load is complied with: and
- b) the pre-requisite courses for the higher level courses have been passed.

2.14.3 WITHDRAWAL

A student whose CGPA falls below 3.0 at the end of a particular year of probation shall be required to withdraw from the university.

A student who has been on probation once and whose CGPA is still less than 3.0 in the session immediately following the one on which he was already on probation shall be required to withdraw from the programme.

2.14.4 TRANSFER

Students who transfer from other Universities shall be credited with only those courses deemed relevant to the programmes, which they have already passed prior to their transfer provided that they shall meet the additional requirements in the receiving Department.

2.14.5 ATTENDANCE

In order to be eligible to take examination in a particular taught course, a student shall be expected to have accumulated a minimum of 75% attendance of the total period of formal instruction delivered for the course.

2.15 COURSE EVALUATION

i) Attainment levels

In the Postgraduate Building Programmes assessment of students achievements shall be based on:

- Examinations
- Term Papers
- Design Crits and Presentations
- Studio/Practicals
- Group project Assignments
- Dissertations/Theses

ii) Continuous Assessment

Continuous assessment shall be done through essays, tests, term papers, tutorial exercises, quizzes and home-work.

- (a) Scores from continuous assessment shall not constitute less than 30% of the final marks for courses which are primarily theoretical.
- (b) For courses which are partly term paper presentations and partly theoretical, scores from continuous assessment shall not constitute less than 30% of the final marks.
- (c) For courses that are entirely term paper presentations, continuous assessment shall be based on a student's term paper or reports and shall constitute 100% of the final marks.

2.16 PROJECT REPORTS

Project Reports

There would be Project Report presentations which shall form part of the graduation requirements.

2.17 ENTREPRENEURIAL STUDIES

Entrepreneurial Studies shall be an integral part of Post-Graduate Building Programme with the aim of empowering the graduates with skills that will enable them engage in income-yielding ventures thus preparing them to be responsible, enterprising individuals who will become entrepreneurs or entrepreneurial thinkers and contribute to national economic development and sustainable communities.

2.18 EXTERNAL EXAMINERS SYSTEM

The external examiner system shall be used in the final year of the graduate programme to assess final year courses and projects, and to certify the overall performance of the graduating students, as well as the quality of facilities and teaching.

2.19 Course Outlines I

POST GRADUATE DIPLOMA

This is available in all options in the department.

2.19.1 POSTGRADUATE PROGRAMMES

POSTGRADUATE DIPLOMA IN BUILDING SERVICES

DESCRIPTION OF PROGRAMME

❖ Introduction and Area of Specialisation

Building Services, as a discipline is no longer concentrated only on the design of electrical and mechanical plants in buildings. On a wider front, it is also now concerned with environmental issues, such as illumination, thermal comfort, noise control and fire protection. Building production processes and economic considerations are also important to the design and installation of the services in building.

❖ Duration of Programme

The minimum duration of the course is Three (3) Semesters

❖ Graduation Requirements

Minimum number of earned credit hours

In order to satisfy the requirements for the award of the PGD (BS), a student must;

- i. offer and pass a minimum of 30 credit units. Note: Courses can be audited from relevant departments.
- ii. satisfy other requirements as stated in the rules and regulations of the School of Postgraduate Studies.

2.19.1 LIST OF COURSES WITHIN THE PROGRAMME

FIRST SEMESTER

Title	Units
Lighting	2 Units
Thermal behaviour of buildings	1 Unit
Water supply and drainage	3 Units
Electrical services	3 Units
Air Conditioning	3 Units
Acoustics and Noise control	2 Units

Second Semester

Lifts and telecommunication	1 Unit
Integrated Environmental Design	2 Units
Building Economics	2 Units
Building process	2 Units
Project	3 Units

2.19.2 COURSE DESCRIPTION

Acoustics and Noise Control

Nature of sound; Measure of sound and units; Noise source and spectra Room acoustics; speech reinforcement Airborne and impact noise reduction; noise level specification; sound generation in service systems; vibration isolation.

Lifts and telecommunication

Introduction to lift systems; basis of lift system design; escalators; control system; internal and external communication systems.

Lighting

Nature of light; basic units of measurement; behaviour and control of light; elementary physiology of the eye, main criteria in lighting design; photometry; artificial lighting; natural lighting; combining natural and artificial lighting; survey of lamp types, economics and maintenance; exterior lighting design.

Integrated Environmental Design

Application of services design to the needs of people living and working in buildings; design projects to illustrate the interaction of services with structural, economic and social considerations.

Thermal behaviour of buildings

Introduction to concepts of heat transfer; passive thermal design; cooling load calculations; application of ambient energy sources in buildings condensation in buildings.

Building Economics

Need and aims of cost control; basic cost forecasting; budgeting for building valuation processes; building costs; estimating and measurement; tendering; sources of finance

Water Supply and drainage

Revision of basic fluid mechanics; losses in pipe and duct works; fan selection and system matching; water supply networks; demand and storage capacity sizing; internal drainage design; rainwater drainage; fire fighting systems.

Building Processes

Review of current building processes and their inter-play with services design and relationships and interactions between the parties to the design and construction of buildings. Computer appreciation in Building Services

Electrical Services

Revision of basic electrical theory; electricity generation and distribution; supply regulations; circuits, cables, cable sizing, voltage drop; internal distribution, earthing practice; site and temporary supplies; economics of supply; tariffs; load factor, maximum demand, power factor and power factor correction; electric motors; protection of installations; standing and alternative supplies; power and control circuits for lifts, automatic fire detection; electrical safety.

Project

Individual project that may involve design case study; analytical or experimental topics.

Air-conditioning

Introduction and definition; air/water vapour properties. Psychometry of air conditioning. Thermal comfort; inside and outside design conditions. Choice of supply conditions.

Heat gains from solar and other sources. Cooling load. Vapour compression refrigeration; cooler coils, air waters condensers, cooling tower, vapour absorption refrigeration. Ventilation and filtration.

2.20 Course Outline II**2.20.1 MSC/M.TECH. PROGRAMMES****A. M.SC. CONSTRUCTION TECHNOLOGY**

This programme is designed for those who may wish to work either in the design offices or on site, or specialize in the area of structures for teaching and research. The list of required courses is as follows:

Courses	Credit load
Advanced Structural Analysis	4
Advanced Structural Design	4
Foundation Design and Soil Mechanics	3
Advanced Construction Technology	4
Research Methods	2
Advanced Concrete Design	3
Steel Design	2
Dissertation	6
One Elective	<u>2</u>
	30

ELECTIVES

Quantitative Methods	2
Computer Methods	2
Advanced Building Services	2
International Construction Management	2
Project Risk Management	2

B. M.SC. CONSTRUCTION MANAGEMENT

The objective of the programme is to provide advanced education and training in Construction Management. The course will be handled by the use of lectures, discussion periods, management exercises, seminars and tutorials. The list of courses is as follows:

Courses	Credit Load
Management Information Systems	3
Building Project Finance	3
Construction Plant and Equipment	3
Work Study Applied Building	3
Advanced Management in Construction	3
Building Economics & Industrial Organization	3
Construction Logistics & Estimating	3
Quantitative Methods	3

Dissertation	6
Electives	2
	30

ELECTIVES

Construction Management Practice	2
Human Resources Management	2
Project Risk Management	2
International Construction Management	2
Strategic Facilities Management	2

C. MSc IN PROJECT MANAGEMENT (MPM) PROGRAMME

❖ Introduction and Area of Specialisation

This is a terminal degree. The MSc in Project Management programme is designed to equip those involved with large projects in different sectors of the national economy with skills and knowledge necessary to manage effectively available resources and to assist practicing managers and professionals by upgrading their knowledge of management theory and practices

❖ Duration of Programme

The minimum duration of the course is two (2) academic year (24 calendar months)

❖ Programme Entry/Admission Requirements

To qualify for admission to the M.P.M. programme a candidate must hold:

- i. A Bachelor of Science Building, Civil Engineering, Electrical Engineering, Mechanical Engineering, Estate Management, Quantity Surveying, Urban & Regional Planning.
- ii. All candidates must have five years post graduation experience in their respective fields.
- iii. All candidates are required to satisfy a selection process.

❖ Graduation Requirements

Minimum number of earned credit hours

In order to satisfy the requirements for the award of the Master in Project Management a student must have;

- i. registered and passed at least 40 units which include 32 units of the core courses, 4 units of elective courses and 4 units of research projects;
- ii. satisfied all other requirements as stipulated in the regulation of the School of Postgraduate Studies.

LIST OF COURSES WITHIN THE PROGRAMME

Project Environment

Course Code	Course Title	No of Units
	Business Environment	2
	Business Economics	2
	Accounting and Finance	2
	Organisational Behaviour	2
	Human and Industrial Relations	2
	Industrial and Labour Law	2
	Quantitative Methods and Simulations Studies	2
	Values Analysis	<u>2</u>
	TOTAL	<u>16</u>

Project Management Applications

Nature And Content of Project Management	2
Design Management	2
Computer Application/Information Technology	2
Procurement Methods	2
Development Economics	2
Time Management	2
Contract Law	2
Cost Management	2
Research Project	<u>4</u>
TOTAL	<u>20</u>

ELECTIVES (ANY)

Negotiation	2
Resource Management	2
Quality Assurance	2
Buildability	<u>2</u>
TOTAL	<u>8</u>

2.20.2 COURSE DESCRIPTION

These courses consist of two main strands. The first strand is labelled "Project Environment" and contains core management disciplines. The second strand, entitled "Project Management Application", concentrates specifically on the management of construction projects. These application studies also seek to integrate the background management disciplines into the project context. Particular attention is paid to the three dimensions of project control; cost, time and quality. There are electives to be chosen out of the four which belong to the first strand.

PROJECT ENVIRONMENT

Business Environment

The general business environment within which the construction industry operates; an introduction to marketing and business planning, with particular reference to the construction industry.

Business Economics

The economics of the individual enterprise; applications of economic analysis to aspects of a firm's behaviour.

Accounting and Finance

The nature of costs and revenues; opportunity costs and financial decision-making; the meaning and interpretation of financial accounts; capital budgetary techniques.

Organizational Behaviour

The place of the individual within the organization; the nature of the company with particular reference to parameters of success and models of organizations; project strategy, objective and roles.

Human and Industrial Relations

The human relations aspect of motivation and worker behaviour; the industrial relations system, and the interacting roles of unions, employers and government, collective bargaining, disputes and dispute resolution.

Industrial and Labour Law

Liability for negligence, health and safety at work; aspects of employment law; contract; agency; torts negligence.

Quantitative Methods and Simulation Studies

Techniques of data collection and analysis, operation research and computer techniques available to aid management decisions.

Value Analysis

Identification of unnecessary cost a systematised approach to value analysis; life cycle costing in construction.

PROJECT MANAGEMENT APPLICATIONS**Nature and Content of Project Management**

Different approaches and strategies of project management theory and practice; project management techniques in the Petrol-Chemical and other industries and their application to construction.

Design Management

Design process, parameters and variables, the relationship between design and cost; engagement and briefing of the design consultants; management of the design process within time and cost constraints.

Computer Application/Information Technology

Computerised management systems; financial modelling of projects using spread sheet software; network scheduling using the latest and most advanced project management software expert systems for construction applications; CAD/CAM developments including robotics

Procurement Methods

Different methods of building procurement; traditional, design/build, management contracting construction management, separate contracts, BPF systems. Interpretation of the client's requirement, the evolving nature of projects objective and the need for the continual management of the client/project interface.

Development Economics

Financial appraisal and feasibility, town planning and location theory, development budgets; sensitivity analysis.

Time Management

Planning procedures, scheduling techniques - critical path analysis, precedence diagrams, time/location diagrams, line of balance, milestone planning; progressing of works.

Contract Law

Conditions of engagement and forms of contract, building case law; alternative forms of building contract liability of the construction project manager.

Cost Management

Sources of finance for construction; cost planning and budgeting; project contingency monies; cost reporting and integrated cost control systems.

Research Project

Individual candidates should research into relevant topics of their choice.

Electives

Negotiation

Creating the climate, different styles of negotiation; tactics; Bidding; bargaining and reaching settlement.

Resource Management

Resource aggregation and levelling; materials management; and the specialist needs of trade sub-contractors.

Quality Assurance

The application and adaptation of B.S.5750 (and equivalent I.S.O) to the building process; quality systems in building design, quality systems in building construction.

Buildability

Consideration of method and sequence of construction during the design stage; standardisation and dimensional co-ordination of components, managing variations.

D. M.SC. BUILDING SERVICES

This is designed to enhance the knowledge and expertise of those who are engaged in the building services systems and their maintenance. The course embraces lectures, discussion periods, seminars and tutorials. The list of courses is as follows:

Course	Credit Load
Thermodynamics & Aerodynamics of Buildings	3
Climate & Thermal Comfort	3
Introduction to Energy Management	3
Ventilation & Air-conditioning	3
Lighting & Electrical Services	3
Energy Auditing	3
Building Services Design Theory	2
Solid Waste Management	2
Water and Drainage	2
Dissertation	6
One Elective	<u>2</u>
	<u>32</u>

- These are core courses which are compulsory for graduation. Candidates are expected to take all the courses listed under the degree programme in view.

ELECTIVES

At least one elective is expected to be taken by each candidate, from any of the other degree programme areas or any of the courses listed below:

Courses	Credit Load
Energy Auditing	2
Construction Economics	2
Law and contract Systems	2
Energy Conservation Methodologies	2
Internal Environmental Design of Buildings	2
Industrial waste pollution	2

(E) MSC/M.TECH BUILDING MAINTENANCE

The objective of the programme is to provide advance education and training in building maintenance. Lectures, tutorials, seminars and presentations plus theses are compulsory requirements for the course. The courses are as listed as listed below:-

Credit Load	
Advance management in Construction	3
Design and Construction Methodology	3
Building Economy and Industrial Organization	3
Advanced Operations Research	3
Construction Logistics and Estimation	3
Building maintenance Technology	3
Principles and Practice of Maintenance	3
Building Codes and Regulations	2
Strategic Facilities Management	2
Research Project	6
Electives	<u>2</u>
	<u>33</u>

Electives

Quantitative Methods and Simulation Studies	2
International Construction Management	2
Computer Applications/Information Technology	2
Applied Building Contracts	2

(F) MSC/M.TECH. FACILITIES MANAGEMENT

The objective of the programme is to provide advance education and training in building maintenance. Lectures, tutorials, seminars and presentations plus these are compulsory requirements for the course.

COURSE DESCRIPTION**Construction Economics**

Micro and Macro-Economics Introduction. Concepts of Value, cost and price Development Economics and the construction Industry. Demand and Supply as it affects construction Business Economics Theory of the firm. Pricing Behaviour in the construction industry. Business forecasting. Risk Analysis.

Law and Contract Systems

The Legal system with particular reference to construction. The Law of Contract emphasizing the ICE, JCT and SFBCN form of contract. Contract of Employment Laws, Trade Unions, Welfare and Safety Arbitration, Building and Civil Engineering Contract procedure.

Advanced Management in Construction

This course introduces the student to the theory of Management and Business Management in general, information retrieval and management, management objective and office procedure, production methods and control. Financial accounting and control of funds, Building Contracts and procedures, tendering and bidding, Forecasting and Planning the use of statistical concepts of probability.

It also covers areas of Plant Management and Construction equipment cost analysis, Personnel management, Industrial Relations both at site and office administration, building management and influence of economic factors, and communication within the construction industry.

Design and Construction Methodologies

The objective of this course is to provide adequate knowledge on the theory and practice of design and construction of buildings. Design methods and production processes, Production Methods and Processes on the Building sites. The influence of large unskilled labour on Design and Construction Methodologies. Reshaping the value judgment of design and production terms in the construction industry.

Building Economics and Industrial Organization

The importance of economics in construction management is covered in this course Business Objective: the allocation of resources; market mechanism. Demand theory, indifference analysis, Supply, Production function, costs. Models of market behavior; monopoly competition, discriminating monopoly, Imperfect competition, behavioural

theories. Factor markets: the remuneration of factors of production definition and measurement of National income. The circular flow of income, consumption, saving investment. Fluctuating in general and building activity. The role of money, interest rates, inflation, International trade government economic policy, government intervention location of fabrication and assembly, transport costs scale of economic activity, comparison between construction and other industries. Integrated, diversification mergers; legislation restrictive practices, experience in construction industry. The structure of and communication within the construction industry, implication for cost, quality and growth of output.

Human Resources Management

Understanding Organizations, Organizational Culture, Employee motivation and human relations, Manpower Planning, recruitment, selection and engagement of personnel. Education and training, safety health and welfare, industrial relations.

Construction Management Practice

- Design management – understanding design process, client briefing, design control and approvals. Value engineering, project formulation
- Project delivery systems – traditional method, design and build, management contracting, construction management, BOOT, partnering.
- Principles of buildability and constructability
- Performance management
- Planning and scheduling techniques, network diagram etc
- Productivity studies, project monitoring and evaluation
- Re-engineering construction management process
- Principles and application of lean construction
- Sustainability and safety

Project Risk Management

- Sources of Risks
- Identification and classification of risks
- Quantification of risk s
- Different method of risks analysis
 - Probability theory
 - Sensitivity analysis
 - Monte Carlo simulation
 - Utility theory
- Risk allocation
- Response to risk in projects (risks transfer, sharing retention, avoidance)

International Construction Management

Economic development patterns and the industry. Multinational Enterprises (MNE) theory and its application to international construction. Financing and management of International projects. International Construction and/in developing countries. Development of Construction Management Skills in developing countries. institutional dimensions.

Strategic Facilities Management

- Evaluating the applications of contemporary facilities management
- Drawing comparison between reactive and proactive approaches to facilities management
- Discussing in-house and outsourcing issues
- Distinguishing between least – cost facilities and best value facilities management
- Overview of facility management and the development of the profession and practices.

Building Projects Finance

Introduction to financial accounting, examination and analysis of source of funding for financing working capital and other real estate transactions. Investment analysis with particular reference to construction projects. Management, serving and repayment of loans; methods of loan renegotiations and rescheduling. Policy and decision making as it relates to financial management; Example – hiring/buying/leasing plant and equipment’ making and buying building material and products. Marketing Construction Products: Urban Development Financing etc.

Advanced Building Construction Technology

Beams and column structures, Frame structure, Foundations retaining walls structures, Two dimensional roofing systems plates, membranes shell, folded plates, space grids, precast and prefabricated structures, Industrialised building systems.

Construction Plant and Equipment

The importance of construction equipment in the production of buildings. Typical construction equipment, classifications, Performance and their relative cost advantage. Plant and Equipment – Management Selection, brands mode of acquisition and use, operation maintenance and safety measures. The annual cost, depreciation replacement and scraping of construction equipment. Influence of tax on buying of new equipment; the development of appropriate basic equipment for the developing countries.

Work Study Applied to Building

Introduction to Workers Preference and Productivity Studies, Time Study-Principle, Procedures and Applications, Work Measurement Principles Procedures and Application, The use of activity sampling on the Building Sites-Practical applications, difficulties and prospects of job evaluation and value engineering investigation of alternatives financial and non-financial incentives; workers attitudes.

Advanced Management Studies

Manpower management. Industrial relations as a fact of management. Main areas in industrial relations, Negotiation of incomes and conditions of employment agreements. Procedures for avoiding disputes. Joint consultative arrangements. Fringe benefits – state, private and collective. Negotiation procedures. The role of the government in industrial relations. Conciliation and arbitration in the prevention and settlement of trade disputes. Dismissals procedures. Selection or redundancy procedures, statutory tribunals for safeguarding rights of individual recognition of trade unions, organization and manpower planning. Manpower inventory and forecasting of requirement. Career planning.

Manpower delegation, recruitment and selection, marketing research: the purpose and scope of marketing research. The major variables. Types of study. Advertising research: leadership surveys, impact measurement. Sales forecasting: simple regression analysis, multiple factor analysis.

Building Maintenance Technology

Forms of changes in building. Decay, changes in appearance, weather foreign attacks etc., the mechanisms and processes of the changes. Methods for maintaining physical stability influence of environmental factors: construction detailing as tool against premature failures; tolerance and standards. Performance testing and durability prediction case studies on service performance of buildings. Quantitative studies. Maintenance as an extension of design methods.

Principles and Practices of Maintenance

Analysis of maintenance works in selected organizations. Structure of the maintenance strategies and management. Relevant laws relating to Building Maintenance. Direct labour and building maintenance contract. Maintenance economics and control systems, supervision of operations. Professional standards to management of residential, commercial and industrial properties; leasing and tenancy terms. Structure survey practices. The management of public properties.

Building Codes and Regulations

A review of codes and regulation from planning control and application view points-National codes, States Codes, Local Codes and other regulating agencies of relevance to the construction industry. Special studies in fire health, safety, materials specification etc. standards and standard's setting; criteria for setting standards; and the practically of some known standards.

Building Materials and Structures

The structure and use of currently applied building materials. The functional adequacy of existing methods. Application of existing materials including local ones to new situation. Advanced Construction Techniques. Appropriate production techniques for manufacturing building materials locally. Practices and procedures in the use of other building materials. The use of new materials for structural purposes. Specifications.

Theory of Structures

Elastic analysis of plane and space frames, elastic instability of members and frames; plastic analysis of plane and space frames, incremental collapse, alternating plasticity and shakedown, influence of axial loads and instability on plastic collapse loads, failure loads deflection of members after yielding begins, natural frequencies of vibration, dynamic response to impulsive loads; fatigue; approximate methods of analysis.

Design of Structures

Structural design in steel, concrete, masonry, timber and non-conventional materials review of recent and proposed design codes with their philosophy, justification and shortcomings structures for earthquake and impulsive loads. Design topics chosen from such options as cable structures, bridges, tubular construction, box girders, cranes, lattice towers space frames sandwich construction, and shells depending on the field of experience of candidates.

Strength of Materials

Two and three dimensional problems in theory of elasticity in plates shells and bars under various loading conditions; propagation of waves in elastic media; finite element methods torsion. Fracture mechanics of structural materials and appropriate usages; non-destructive testing in-situ testing creep and deflection in concrete crack with perdition.

Advanced Structural Analysis

Deformation due to shear. Application of matrix methods for analysis of long span structures, arches, portals shells etc. introduction to analysis of structure subject to dynamic loading systems and to elastic stability of structures. Introduction to structural dynamics.

Advanced Design of Timber Structures

Structural properties of wood. Effect of anisotropy. Design of members to satisfy flexural, tensile and compression forces. Plywood and Laminated members for frames roof trusses etc. and their special problems. Standardization in design for walls, trusses, beams and columns. Joints and jointing designs especially timber connectors composite design.

Advanced Design of Reinforced Concrete Structures

Advanced topics in reinforced concrete design using ultimate strength. Deflections and shear strength calculations under different loading conditions of beams, beam-columns, slabs etc. compression members. Two way slab, flat slab, Torsion. Composite construction. Introduction to prestressed concrete, special problems in design.

Advanced Design of Steel Structures

Compression members. Designs of columns and effect of shear. Bending of unsymmetrical sections. Design for torsion and backing. Thin web plate girders. Beam – column steel frame Design and the unstiffened light gauge steel elements. Effect of fatigues. Standardization

Concrete Practice

Quality control of concrete in its various applications. The design of concrete mixes to produce a predetermined end product. The Laboratory efforts for large scale production: Field operations and laboratory testing of samples, models and full size structural members. Precast concrete and prestressed concrete practice. Effect and failure in concrete works and products including remedies. Fire effects on concrete.

Thermodynamics and Aerodynamics of Buildings

This course deals with modes of heat transfer and effects of wind on building.

Thermal: dynamics and steady state heat flow, units of measurements, thermal characteristics of various building materials.

Wind Effect: The action of wind on pressure pattern around buildings design methodology, field measurement.

Building Services Design Theory

This course will deal with the fundamental concepts which give rise to better design of engineering services in buildings. Flows system; complementary system; sizing of systems; control of systems; services as building sub-systems; total systems.

Climate and Thermal Comfort

The Sun; electronic wave spectrum Terrestrial solar energy interception rate of energy usage; annual variation in local solar intensities; external design condition for dry, wet and harmattan seasons; microclimate; large scale weather modification. Assessment of thermal comfort; various parameters affecting them comfort. ASHRAE comfort charts.

Introduction to Energy Management

Managing energy. Principles of energy conservation. Role of the energy manager. Energy auditing and costing. Control and planning. Energy measurement. Primary fuels – classification, delivery, storage and handling. Sources of loss and loss control. Steam and hot water production. Component costs and their control. Boiler efficiency. Steam distribution and use. Chimneys and waste gas handling: Industrial space cooling – system, air changes, buildings insulation controls, heat recovery. Furnaces-efficiency, heat losses, heat recovery. Drying processes. Electricity tariffs and cost control. Load factor. Compressed air. Water. Lubrication and ‘waste oil transport fleet operations and equipment.

Ventilation and Airconditioning

Ventilation systems types of fans and air filter fan duty and characteristics. Fundamental properties of air and water vapour mixtures, psycholotry or air conditioning process. Heat gain from solar and other sources. Cooling load. Vapour compression refrigeration, cooler coils and air washers. Refrigeration plant: automatic controls, Airflow in ducts. High velocity systems.

Advanced Vibration and Noise Control

Improving room acoustics. Sound insulation. Motorway noise and dwellings. Vibration in buildings. Theory and practice of acoustics design. Measurement of sound.

The Internal Environmental Design of Buildings

This course is about the engineering principles applied to the design and specification of the internal environment experienced by occupants of habitable space.

Aims

The unit aims to develop understanding of the thermal, visual, aural and air quality needs of occupied spaces. It also aims to develop understanding of solar effects, weather and climate on the performance of environmental installations.

There are four outcomes to this unit. The candidate will be able to:

- Specify optimum conditions for occupied space.
- Assess the impact of external environmental conditions on occupied spaces.
- Assess the fire hazards exhibited in buildings and develop fire plans and fire detection systems.
- Relate functional requirements of buildings to the environment.

This course has been mapped to the following national occupational standards:
Identify the requirements of clients for engineering products or processes. Produce specifications for engineering products or processes. Identify and define areas of research. Undertake research into engineering products or processes. Evaluate the results of research. Establish a design brief for engineering products or processes. Develop a strategy for the design process. Create designs for engineering products or processes. Evaluate design for engineering products or processes. Determine the production requirements of engineering products and processes. Specify production methods and procedures to achieve production requirements. Determine the installation requirements for engineering products or processes. Specify installation methods and procedures to achieve installation requirements. Maintain and develop own engineering expertise.

Lighting and Electricity

Theory of light propagation. Estimating daylight in buildings. Calculation of illuminance and luminance in interiors. Heat from lighting, design of lighting system on buildings. Overhead and underground distribution systems. General layout of distribution systems and wiring installations. Distribution substations (transformer stations). The basic scheme of interconnected low voltage distribution systems (operating voltages). Three – phase, four wire connection. Typical rural distribution systems. Voltage control in distribution networks. Network calculations on distribution. Earthing transmission lines low voltage distribution systems, industrial and domestic installations. Domestic Control units. Relative economy of distribution methods. Organization of Power Supply. Regulations on installation and operation of electrical equipment Method of charging for electrical supply.

Energy Conservation Methodologies

Fuel prices and conversion. Efficiencies. Reduction of energy consumption. Optimizing building design for energy self-sufficiency low-cost energy saving methods. Reduction of room temperatures. Draughtproof. Application of thermal insulation, conductive, convective and radiative insulators. Mass transfer insulators. Thermal insulants. Cavity walls. Double-gazing effects of applying low-cost energy-saving methods to buildings. Thermal design.

Energy Accounting

Introduction. Measurement of resources. Building resource allocation model. Life-cycle costing. Life-cycle costing using market prices. Life-cycle costing using prime energy accounting energy analysis. Life-cycle costing using energy analysis.

Water Supply and drainage

Revision of basic fluid mechanics; losses in pipe and duct works; fan selection and system matching; water supply networks; demand and storage capacity sizing; internal drainage design; rainwater drainage; fire fighting systems.

Industrial Waste Water Pollution and Control

Effluent treatment, sedimentation process, filtration, coagulation and flocculation, membrane separation process, flotation, absorption, ion exchange, chemical exudation and reduction, disinfection biological process. Treatment of sludge. Waste Water management from chemical, electro-chemical metal treatment processes. Iron and steel Industry, food industry, gas, coal and tar industry, pharmaceutical industry, textile

industry, soap and detergent. Petroleum and petro-chemicals, alkaline industry and radio active waste water.

Solid Waste Disposal and management

Solid Waste Disposal and Management in developed and developing countries. Measurement of environmental effects of solid waste disposal. Solid waste treatment, Landfills. Waste reduction and minimization. Waste recycling. Bio-degradation and bioremediation. Contaminated Soil management. Green chemistry. Hospital/Medical waste management. Laws and regulations on solid waste management for all sectors.

Construction Logistics and Estimating

Cost control at all levels of construction process. Traditional Estimating of Building works and suggestions for improvements. Introduction to methods, analysis and cost estimating for general construction projects. Analysis and organization of estimates. Office administration and procedures. Theory and Practiced of construction project bidding using statistical concepts and computer applications. Case studies on estimating and bidding strategies.

2.21 Course Outline III

2.21.1 M. Phil/Ph.D PROGRAMMES

A candidate with outstanding performance in the M.Sc. programme of the Building Department may be considered for admission to the Ph.D. programme in any of:

- (a) Construction Technology
- (b) Construction Management
- (c) Building/Services
- (d) Construction Materials
- (e) Building Structures
- (f) Building Maintenance
- (g) Facilities Management

Candidates from other approved Universities with comparable M.Sc. qualifications in relevant areas of specializations may also be considered for admission. A candidate of that has demonstrated sufficient promise may be considered for change of registration status from M.Phil. to Ph.D. after the successful completion of two semesters in the M.Phil. programme and having presented at least two seminars in demonstration of that competence, subject to approval by the Faculty/Board of Postgraduate Studies and Senate.

2.21.2 Regulations

Prospective candidates are advised to familiarize themselves with the regulations governing the award of higher degrees of the School of Postgraduate Studies of the university concerned, Such regulations together with the Departmental regulations must be met by the candidate to qualify for the M.Phil/Ph.D. programme. The award of the M.Phil/Ph.D. degree will be as a result of the satisfactory completion of a thesis/dissertation and oral defence of same before a Board of Examiners. The duration of the programme will be a minimum of 4 semesters for M.Phil. and 6 semesters for the Ph.D. programme. As stipulated in the regulations, residence requirements must be met.

2.22 INSTRUMENTS OF ACCREDITATION

2.22.1 INTRODUCTION

The term **quality** simply means fitness for purpose. It means that a product or service fits the purpose according to predetermined standards. Quality as fitness for purpose envisions quality in terms of fulfilling a programme's requirements, needs or desires and is usually based on the ability of an institution to fulfill its mission or a programme of study to fulfill its aims.

Quality is being used to designate the level of acceptable standard in almost every industry such that quality assurance has become a metaphor for the management of the maintenance of quality of goods or services at a good standard. Historically, quality was maintained through control mechanisms. However, in recent years, the practice of quality control has progressively moved from an ex post activity to a more proactive process, known as quality assurance. The industry developed the concept of *total Quality management (TQM)* to capture three key components of quality, namely: *quality control*, *quality assurance* and *continuous monitoring and evaluation*. TQM is not industry-specific; rather is a phenomenon or practice that has universal applicability wherever services are rendered or products produced.

In the Nigerian University System, one of the functions of the National Universities Commission, as the regulatory agency is the regulation of the programmes (undergraduate and Post-Graduate) offered in the entire University system. As with industry, quality assurance in the university system can be both internal and external. The external mechanism as constituted by accreditation conducted by the NUC regulates programmes by ensuring that the universities establish only programmes for which they have the requisite curriculum as well as human and material resources to pursue. The structure of the internal institutional mechanism is comprised of the senate. The external examiner system provides additional assurance that the quality of academic programmes of the university is acceptable to academic peers across the university system.

Accreditation of academic programmes entails peer assessment of the programme against pre-determined standards. The standards are often referred to as Minimum Academic Standards and provide the benchmarks against which the quality of the programme is measured.

The Postgraduate Building Programme is one of the postgraduate programmes in the environmental sciences offered in most Universities in Nigeria. This programme aims at producing quality professional builders and academics for both the public and private sectors of the economy. In order to achieve the aims of establishing this programme and to assess the characteristics of the programme, the accreditation criteria and weight stated below should be used in the assessment of the Postgraduate Building programme.

2.23 CRITERIA FOR ASSESSMENT (Total:100 points)

2.23.1 ACADEMIC CONTENT (22)

- i) **Clarity of Mission, Philosophy, Aims and Objectives of Programme (4):** The mission, Philosophy, aims and objective of the programme must be explicitly expressed and clearly defined.
- ii) **Admission Requirements (3)**
The degree to which students admitted into the programme meet prescribed Minimum Admission Requirements should be assessed.
- iii) **Academic regulations (3)**
The rules and regulations guiding the conduct of the M.Sc Programme should be explicitly stated in a postgraduate prospectus. The students' level of awareness of the programme's rules and regulations should be gauged as well.
- iv) **The Curriculum (12)**
The curriculum should have adequate mechanisms to properly prepare students to adapt to the practical world of Building. The adequacy of the curriculum content to produce competent Builders should be assessed.

2.24 ASSESSMENT (10)

- i) **Course Work (3)**
Assessment should be made on the efficacy of the course work mode of assessment.
- ii) **Students project/thesis (3)**
The standard of essays, examinations, tests and projects should be evaluated to ascertain the quality of the programme.
- iii) **External Examination System (4)**
The efficiency of the external examination system should be ascertained. The quality of the external examiners used should be assessed through the external examiner's Report.

2.25 STAFFING (30):

- a) **Academic staff (28)**
The quality and credibility of the academic staff should be examined, using the following indices.
 - i) **Staff: Students Ratio (1:10) (10)**
 - ii) **Staff Mix of 20:30:50 (5)**
 - iii) **Academic staff with Doctorates (7)**
Percentage of faculty with a doctoral degree. A minimum of 75% of the teaching staff should have doctorate degree.

vi) **Staff Development (5)**
There should be proven evidence of a well established staff development programme. The accreditation panel should determine the percentage of staff that have benefited from the scheme.

b) **Non-Teaching Staff (2)**
The quality of the non-teaching staff available for the programme should be assessed.

2.26 COURSE DELIVERY AND FACILITIES (24)

i) **Course delivery (11)**
The modes of course delivery such as lectures, seminars, group projects, and held work in-company training, etc, have been adequately used in training the Postgraduate Building students. The Panel should assess this and measure the effectiveness and adequacy of the various course delivery modes.

ii) **Facilities (5)**
Assessment should be made on the degree of availability of facilities such as classrooms, seminar rooms, lecture office accommodation, ICT tools and equipment.

iii) **Library (5)**
The quality, relevance, currency and quantity of books and international academic and scholarly journals available for the programme should be assessed to determine their adequacy or otherwise.

iv) **Funding (3)**
The adequacy of funds available for the programme should be assessed. How far is the postgraduate school able to assist indigent student financially.

2.27 ALUMNI RATING (14)

i) **M.Sc Alumni Activity (3)**
Availability of feedback from Alumni by employers and sponsors should be obtained and used to assess the level to which the programme has produced the required quality of managers. Employability of graduates; ability to secure employment for their graduates.

ii) **Placement Success (2)**
The percentage of preceding year graduates that gained employment with or without the help of career advice.

iii) **Employer Recommendation (2)**
Employers of M.Sc graduates would be asked to rate their performance.

iv) **Career Progress (2)**

The degree to which alumni have moved up the career ladder three years after graduating. Progression is measured through changes in level seniority and the size of the company or organization in which they are employed.

v) The result of the accreditation shall be given by the aggregate weighting accumulated as follows:

i) Full accreditation	70-100%	5 years
ii) Interim accreditation	50-69%	2 years
iii) Failed accreditation	0-49%	

3. ENVIRONMENTAL MANAGEMENT AND CONTROL

3.0 POSTGRADUATE PROGRAMMES IN ENVIRONMENTAL MANAGEMENT AND CONTROL

3.1 INTRODUCTION

We are living in a world of accelerating change where the primary influences on the environment are brought about by human activities. Climate change, global warming, the hole in the ozone layer, loss of biodiversity, marine pollution and radioactive contamination are just some of the topics to hit the headlines on a regular basis. They are newsworthy because they threaten the way in which we live. It is easy to say that we should do something about these threats. But in the complex world of business, global economies, international treaties and politics, the solutions are often complex and elusive. The scientific basis of the problems may also be poorly studied and yet action may be required. Governments and business will increasingly rely on environmental professionals to guide their decisions, to make critical appraisals of the evidence, to balance the often-competing interests, and to make legally defensible cases. Such professionals need to understand the science, to know where to obtain expert assistance, to appreciate the commercial implications and to work within national and international law. This is the role of environmental managers.

In the developing countries of the world, increasing urbanization, industrialization, continuing growth of agricultural and mining sectors and marked development in new technologies at the other sectors of the economy, exploitation and depletion of natural resources, the quality of the environment and many other ecological problems have been major sources of concern. Total development of a country (physical, industrial and other economic development) must take place without any negative consequence on the environment. Nigeria and many other African countries are now being gripped by these concerns and it has become crucial to incorporate environmental management and control as a vital component of development in these countries to ensure ecosystems balance and environmental quality.

Achieving this requires sound scientific understanding and specialized training which rest on applied ecological and scientific principles. Therefore, there is a need for post-graduate studies in environmental management and control to produce well trained professionals who will work with Federal and State Governments as well as the private sector towards protection of the environment and human health from pollution. It is also hoped that the programme will create awareness on environmental issues among the populace.

The postgraduate programme in Environmental Management and Control is designed for science graduates hoping to have distinguished careers in the environmental field. The programme provides an opportunity to study many aspects of the environment and to increase the participants understanding of the multi-disciplinary nature of environmental issues.

The postgraduate programme in Environmental Management and Control differs from most postgraduate degrees taught in the Faculties of the Built Environment in various Nigerian universities in its:

- ❖ emphasis on the science underpinning Environmental Management and Control.
- ❖ integration of various modules of the different Sciences of Biology, Ecology, Chemistry, Physics, Geography etc.

Body of knowledge in the areas of Environmental Impact Assessment, Pollution control, Information Technology, Waste Management etc has been incorporated to cater for these developments.

3.1 PHILOSOPHY

The fundamental philosophy underlying the programme is the training of graduates from a wide range of disciplines and backgrounds to the highest academic standards in the identification and resolution of environmental issues.

3.3 VISION

The programme will produce skilled manpower, trained specifically for environmental surveillance, monitoring and management as against the present practice where these tasks were performed by people trained in basic and applied sciences. The academic programme is also designed to provide the training needed for an understanding of the environment and to build upon this foundation by exploring in some depths, specific aspects such as resource depletion, recycling, re-use and the impact of science and technology on the environment.

3.4 AIMS AND OBJECTIVES

Postgraduate programmes in Environmental Management and Control are designed to:

- (a) Increase the students understanding of the multi-disciplinary nature of environmental issues.
- (b) Provide sound specialized and effective practical oriented training of course work, fieldwork and research in environmental monitoring, management and control.
- (c) Provide high-level skilled manpower with both academic and professional competence for tackling environmental issues in all their ramifications.

The recommended postgraduate programmes in Environmental Management and Control are as follows:

- (1) PGD Environmental Management and Control (PGD – EMC)
- (2) Master of Environmental Management and Control (Master of EMC)
(Professional)
- (3) M. Sc Environmental Management and Control (M. Sc. EMC)
(Academic)
- (4) Ph. D Environmental Management and Control (Ph. D. EMC)

3.5 GENERAL REGULATIONS: POST GRADUATE DIPLOMA IN ENVIRONMENTAL MANAGEMENT AND CONTROL (PGD-EMC)

The programme will consist of course work, field trip, practical, examination and a short project (long essay).

3.5.1 ADMISSION

Basic Admission Requirements for PGD programmes

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

Matriculation requirement of individual University including Mathematics and English Language.

A candidate with at least 3rd class or pass degree in Natural or Applied Sciences, Medical Science, Agriculture, Engineering, Education Science and the Social Science.

HND Upper Credit minimum or its equivalent in Natural or Applied Sciences, Agriculture and Engineering from recognized higher institutions may also be considered.

3.5.2 Duration of Programme

- i) Full-Time PGD shall run for a minimum of three (3) Semesters.
- ii) The Part-Time PGD shall run for a minimum of four (4) semesters.

3.5.3 Requirements for Graduation

A candidate must fulfill the following conditions to be awarded the Postgraduate Diploma:

The candidate must pass a minimum of 28 credits Units made up of the following:

- > 12 Units of Core Courses
- > 12 Units of Electives Courses
- > 4 Units of Project

3.5.4 Student Enrolment

This should not be more than 40% of Postgraduate enrolment of Department/Faculty.

3.5.5 ACADEMIC STANDARDS

a) Academic Regulations

(i) Academic Session

An academic session consists of two semesters. Each semester normally comprises 15 weeks of teaching and two weeks for examinations.

(ii) **Course Credit Unit System**

All Postgraduate Diploma Programmes shall be run as Course Credit Unit System. All courses should therefore be sub-divided into more or less self-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 or Unit**

Credit units are weights attached to a course. One credit unit is equivalent to:

- * one hour per week per semester of 15 weeks of lectures
- * two hours per week per semester of 15 weeks tutorial
- * three to five hours per week of 15 weeks laboratory/field work/studio.

b) **Programme Requirements**

Registration Procedure

Students shall normally complete registration for courses for the semester not later than two weeks after the start of the semester. Students cannot withdraw from a course after seven weeks of lectures in a given semester.

A student who fails to sit for examination for which he/she registered is deemed to have failed the course.

Students who fail to sit for examination in more than two courses at the end of a given semester shall be deemed to have withdrawn voluntarily from the programme.

3.5.6 Student Academic Status

A student's academic status shall be determined on the basis of his/her performance at the end of the semester examinations. The following categorization shall be used:

(a) **Good Standing**

To be in good standing, a student must in each semester have a Cumulative Grade Point Average (CGPA) of not less than 3.00

(b) **Withdrawal**

Candidates with less than 3.00 CGPA shall remain in the programme for the 1st semester but shall be withdrawn if he/she fails to attain 3.00 CGPA at the end of the second semester.

(c) **Attendance**

In order to be eligible for examination in a particular course, a student shall have attended a minimum of 75% of the total periods of formal instructions delivered for the course.

(d) **Course Evaluation**

In the Postgraduate Diploma Programmes, assessment of students' achievements shall be based on:

- i) Course Examination
- ii) Term papers/Seminars;
- iii) Other assignments.

(e) **Continuous Assessment**

Continuous assessment shall be done through essays, tests, term papers, tutorial exercises, quizzes and homework.

Scores from continuous assessment shall constitute 30% of the final marks for courses which are primarily theoretical.

For courses which are partly term paper presentations and partly theoretical, scores from continuous assessment shall constitute 40% of the final marks.

For courses that are laboratory based (practical) or field studies, continuous assessment shall be based on a student's practical reports or field reports and shall constitute 100% of the final marks.

(f) **Examination, Grading Procedure & Results**

(i) Examinations

- a) In addition to continuous assessment, final examination shall be given for every course at the end of every semester.

The total score obtainable for every course continuous assessment and final examination is 100%.

The total final examination scores would vary as follows, from one course to another depending on the score of the continuous assessment of a course as explained above.

Continuous Assessment	30	40	100
Final Examination	70	60	0
Total	100	100	100

b) Each course shall normally be completed and examined at the end of the semester in which it is offered.

(ii) Pass Mark

The minimum pass mark in a course shall be 50%.

iii) Grading System

Grading of courses shall be done by a combination of percentage marks and letter grades translated into a graduated system of Grade Point Equivalents (GPE). For the purpose of determining a student's standing at the end of every semester, the Grade Point Average (GPA) system shall be used. The GPA is computed by dividing the total number of credit points (TCP) by the total number of units (TNU) for all the courses taken in the semester. The credit point for a course computed by multiplying the number of units for the course by the Grade Point Equivalent of the marks scored in the course. Each course shall be graded out of a maximum of 100 marks and assigned appropriate Grade Point Equivalent as in the following table:

Credit Units	% Scores	Letter Grades	Grade Points (GP)
Vary according to contact hours assigned to each course per week per semester, and according to load carried by students	70 – 100	A	5
	60 – 69	B	4
	50 – 59	C	3
		F	0

iv) Presentation of Results

Results from the Postgraduate School Board of Examiners shall be presented to Senate for approval.

v) Release of Results

Results shall be released / published not later than 2 weeks after approval by the Senate.

c) External Examiner System

The external examiner system shall be used at the end of the Postgraduate Diploma programme to assess the courses and projects and to certify the overall performance of the graduating students, as well as the quality of facilities and teaching.

The project shall be subject to oral examination where the student is required to show evidence that he/she carried out the work and had pertinent knowledge of the subject matter.

- d) **Postgraduate Diploma Classification**
The determination of the PGD shall be based on the Cumulative Grade Point Average (CGPA) earned at the end of the programme.

Cumulative Grade	Class of Diploma
4.50 - 5.00	Distinction
3.50 – 4.49	Credit
3.00 – 3.49	Merit/Pass
Below 3.00	Fail

3.6 RESOURCE REQUIREMENT FOR TEACHING AND LEARNING IN THE PROGRAMME

3.6.1 Academic Staff

- i) **Teacher/Student Ratio**
The staff to student ratio for the undergraduate Programme in Environmental Science is 1:30. The general norm for resource requirements for the postgraduate to undergraduate programmes is 1:15. Hence for effective teaching and learning, the postgraduate programme shall have a teacher to student ratio of 1 to 10.
- ii) **Academic Staff Work-Load**
An academic staff shall carry a work load not exceeding the maximum prescribed by Senate of the University.
- iii) **Staffing**
There should be a minimum of 8 full time staff on ground in a Department. The teacher should have at least a M.Sc. degree with at least three years university teaching experience and not below lecturer II in rank.

3.6.2 Non-Academic Staff

The services of support staff, which are indispensable in the proper running of the programme as well as for administration, are required. It is important to recruit very competent senior technical staff to maintain teaching and research equipment. Universities should pay attention to optimum proportioning of the non-academic staff to avoid redundancy and overstaffing.

3.6.3 Computer Literacy

With the computer age and application of information technology, both academic and non-academic staff should be sufficiently computer literate.

3.6.4 Student course Evaluation

There is a need to have students to evaluate the course at the end of the semester to know how well the course has been delivered and also for the general improvement of the course. The Dean of PG School should set up the modalities for carrying out the evaluation.

3.7 COURSES

Candidates will be required to register for a minimum of 30 units of course work for the two semesters. These shall consist of 16 units of compulsory courses and not less than 14 units of electives. However, for the uniformity of course codes for transcript purposes, it is recommended that all PGD courses should be coded at 600 level.

CORE COURSES		UNITS
EMC	National and Global Environmental Issues	2
EMC	Environmental Impact Assessment and Auditing	2
EMC	Introduction to Public Health and Environmental Law	2
EMC	Environmental Pollution: Sources & Control	2
EMC	Seminar	2
EMC	Introduction to Statistical Techniques and Computer Usage	2
EMC	Short Research Project (or Long Essay)	4
		16 Units
 ELECTIVES		
EMC	Fundamentals of Ecology	2
EMC	Environmental Monitoring	2
EMC	Introduction to Remote Sensing and GIS in Environmental Management	2
EMC	Municipal & Industrial Waste Management and Control	2
EMC	Soil Survey and Land Use Planning	2
EMC	Farming Systems and the Environment	2
EMC	Human Settlement & Development	2
EMC	Environmental Aspects of Mining	2
EMC	Resource Management & Conservation	2
EMC	Ecological Effects of Chemicals on the Environment	2
EMC	Occupational Health & Safety	2
EMC	Control & Management of Ecological Disasters	2
EMC	Health, Housing & Urban Development	2
EMC	Environmental & Resource Economics	2

DESCRIPTION OF COURSES**CORE COURSES**

- EMC **National and Global Environmental Issues 2 units**
Climate change and Global warming, Acid Rain, Ozone layer depletion, Loss of biological diversity, Trans-boundary movement of toxic wastes, Oil and gas pollution, Desertification, Nuclear Pollution, Land degradation, Deforestation.
- EMC **Environmental Impact Assessment and Auditing 2 units**
Definitions and concept. Framework for environmental impact assessment (EIA) and Auditing. Environmental impact assessment of development projects. Strategic Environmental Assessment.
- EMC **Introduction to Public Health & Environmental Law 2 units**
The course will examine the concept of the environment, the meaning and scope of environmental law, public health and environmental laws including the various factories legislations, and the laws proscribing environmental pollution, and including the dumping of the toxic and radioactive substances, within the context of the rights of citizens to a clean environment and good health and ultimately, the rights of life. It will also examine the extent of the responsibilities of the various bodies set up by the Federal and State Governments for the regulations of environmental protection, via-a-vis the rights of individuals, etc. It will further examine the criminal liabilities and offences created under the various laws of relating to environmental protection, the problem of proof, locus standing, and the crucial role of courts in enforcing these laws, as well as the evaluation of our domestic laws with such international framework.
- EMC **Environmental Pollution: Sources and control 2 units**
Pollution and their sources. Effects of pollution. Ecological disasters and their causes. Environmental effects of urbanisation and industrial development. Natural climatic changes.
- EMC **Seminar 2 units**
Literature/field search and presentations on topical and special local, national and global environmental issues.
- EMC **Introduction to Statistical Techniques & computer Usage 2 units**
Data collection and presentation. Design and analysis of experiment in environmental management and control. Clearing, coding, information retrieval and computer usage appreciation. Computer concepts. Information representation. Packages – MS-Word, MS- Excel.

EMC **Short Research Project (Or Long Essay)** **4 units**

ELECTIVES

EMC **Fundamentals of Ecology** **2 units**
Introduction to Ecological principles and concepts. The scope of ecology i.e. its relation to other sciences and its relevance to human civilization. The subdivisions of ecology i.e. synaecology and autecology.

EMC **Environmental Monitoring** **2 units**
Introduction, principles and applications of environmental monitoring. Environmental sampling methodology, Sample preservation, processing, etc. Analytical techniques for environmental monitoring. Criteria for selection of methods. Analysis of air, water, soil, sediment, food and biological samples for inorganic and organic pollutants. Data management and presentation.

EMC **Introduction to Remote Sensing and GIS in Environmental Management** **2 units**
Introduction, principles, origin and development of remote sensing and GIS technologies. Sensors for remote sensing systems. Handling of satellite imageries. Application of remote sensing and GIS techniques to environmental monitoring, modeling and assessment. Case studies,

EMC **Municipal and industrial waste management & control** **2 units**
Principles of waste management. Origin, collection, storage and treatment of solid waste from communities. Methods of sewage disposal. Management of municipal sewage system. Major industries and their waste. Waste treatment methods, theories and application. Solid waste minimization (reduction, reuse, recycling and recovery).

EMC **Soil Survey and Land Use Planning** **2 units**
Principles and methods of soil surveys, Soil resource inventories derived from soil surveys, Soil survey interpretation, use of soil resources inventories in planning land use.

EMC **Farming Systems and the Environment** **2 units**
Different types of farming systems. Soil loss and erosion hazards, impact of mechanization of the different types of farming system, cultivation techniques, cultural practices, weed and pest management, socio - economical considerations. Conservation practices. Development planning in farming systems.

EMC **Human Settlement and Development** **2 units**

Man, his needs and organisational space. The development of human settlements. Theories of regional development, process of regional development and growth. Environmental impact of regional development. Rural urban continuum. Problems of rural areas. Rural and urban land use and environmental quality. Need for afforestation, soil conservation and landscape designs, parks and reserves. Community development principles. Roles of voluntary organisation. Self help techniques.

- EMC **Environmental Aspects of Mining** **2 units**
Analysis of elements of surface mine. Operation and design of surface mining systems/components (with emphasis on minimization of adverse environmental impacts and maximisation of mineral resources). Environmental pollution, definition and inter-relationships with emphasis on mining and mineral processing operations. Mine atmosphere, detection of mine gases, physiological effects, inflammation and detonation, gas layering and diffusion, dust hazards. Environmental pollution-related hazards. Explosion, gasing, fires, pneumoconiosis. Pollution monitoring and control, methods of control of gaseous and particulate pollutants, absorption, combustion, catalytic destruction, cyclone, inertia separators, electrostatic separators, bag filters, wet trawlers, respiratory etc. Effluent treatment methods, flocculations, coagulation, sedimentation etc. Treatment processes, water recovery and recycling, ventilation technology and design of ventilation systems.
- EMC **Resource Management and Conservation** **2 units**
Land use and land suitability analyses. Ecological management of semi-natural vegetation. Urban ecology and habitat creation. Case studies of protection areas of the country. Type, Bio-indicator, Salinity etc.
- EMC **Ecological Effects of Chemicals on the Environment** **2 units**
Types, nature and characteristics of different kinds of chemicals: physical and chemical properties of chemical which are ecologically important. Toxicants, their formulation, modes of action (structural activity relationships), metabolism and movement in the environment synergism, antagonism, perturbation and relative potency, half-life systematic. Acceptable daily intake (ADI) of pesticides, contact and stomach poison. Dose-response relationships. Handling, storage and safety precautions.
- EMC **Occupational, Health & Safety** **2 units**
Components of Occupational Health. Safety in workplaces. Occupational Hazards and Diseases. Occupational Hazards Control. Legislations. Occupational Medicine. Principles of Industrial Ventilation.
- EMC **Control and Management of Ecological Disasters** **2 units**
Types of ecological disaster. Identification of ecological disaster prone areas of the country,
- CASE STUDIES**
(a) Ecological problems in the Niger Delta area

- (b) Soil erosion areas of Southern Nigeria
- (c) Desertification areas of Northern Nigeria Management of ecological disaster in Nigeria: the role of government. NGO's and Multi-national companies.

EMC **Health, Housing and Urban Development. 2 units**
 Worldwide population and urbanization trends. Cities and emerging or re-emerging diseases. The indoor environment at home. The importance of housing to environment. Addressing housing and environmental problems in urban areas. Green industry towards sustainable practices.

EMC **Environmental and Resource Economics 2 units.**
 An introduction to welfare economics, examining basic concepts including consumer surplus. Pareto optimality, externalities and welfare of future generations, alternative economic approaches to pollution control including the role of taxes and subsidies, the sale of pollution rights and use of environmental standards; basic concepts of cost-benefit analysis and the economic theory relating to resource depletion and conservation. Resource allocation, Micro-economic theory, Decision and cost benefits analysis. Location theory. Pollution economics. Resource depletion and conservation.

EMC **Development & Environment 2 units**
 Concept of environment, environmental sustainability and sustainable development. Impact of human activities on the environment. Technology and environment. Achieving a harmonious relationship between development and environment.

3.8 GENERAL REGULATIONS II: THE PROFESSIONAL PROGRAMME OF MASTER OF ENVIRONMENTAL MANAGEMENT AND CONTROL (MEMC)

3.8.1 ADMISSION

a) Basic Admission Requirements for MEMC programmes

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

- i) Matriculation requirements of individual Universities which must be 5 'O' level credits including Mathematics and English Language.
- ii) Candidates with Bachelor Honours degree (not below Third Class) in Environmental Management, Environmental Science, Natural or Applied Science based subject, Agriculture, Geology, Medical Science or Technology/Engineering.

iii) Candidates with a PGD in Environmental Management and Control with a minimum of Merit/Pass (i.e. 3.0-3.49 of 5.0 scale).

b) **Duration of Programme**

i) A full time Master's Programme should run for a minimum of three (3) Semesters.

ii) Part-time Master's programme should run for a minimum of six (6) semesters.

c) **Requirements for Graduation**

To be awarded a professional Masters degree, candidate must pass a minimum of 34 credit units made up as follows:

9 Core courses of 2 credit units	-	18
5 Elective courses of 2 credit units	-	10
A project course of 6 units	-	6
Total	-	34 units

➤ A student shall present at least one seminar, submit and defend a dissertation proposal.

d) **Eligibility to Proceed to M.Phil / Ph.D and Ph.D Programmes**

The Professional MEMC programme is a Terminal Masters programme. Therefore, candidates admitted into the programme are not eligible to proceed to the M.Phil, M.Phil / Ph.D, and Ph.D programmes in Environmental Management and Control irrespective of their performance in the MEMC programme.

e) **Student Enrolment**

Student enrolment shall be subject to the carry capacity of the Department / Faculty.

3.8.2 Courses

Candidates will be required to register for a minimum of 40 Units of course work for the three semesters. These shall consist of 24 units of compulsory courses and 16 units of electives. However, for the uniformity of course codes for transcript purposes, it is recommended that all Professional Masters courses should be coded at 700 level.

3.9 GENERAL REGULATIONS II: THE ACADEMIC MASTER'S PROGRAMME FOR THE DEGREE OF ENVIRONMENTAL MANAGEMENT & CONTROL (M.Sc. EMC)

3.9.1 ADMISSION

a) **Basic Admission Requirements for the academic Masters Programme**

The criteria for admission into the M.Sc. programme will be as follows:

i) Matriculation requirements of individual universities which must be 5 'O' level credits including Mathematics and English.

- ii) Candidates with 2nd Class Lower Division Bachelors Honours degree in Environmental Management or Environmental Sciences related courses.
 - iii) Candidates with a PGD at credit level pass (i.e. 3.5 of 5.0 scale) or 60% on weighed percentage average.
- b) **Duration of Programme**
- i. A full time Master's Programmes should run for a minimum of 4 semesters.
 - ii. Part-time master's programmes should run for a minimum of 6 semesters.
- c) **Requirements for Graduation**
To be awarded a Masters degree candidates must pass a minimum of 30 credit units made up of as follows:
- > Core courses of eighteen credit units.
 - > Elective courses of six credit units.
 - > A student shall carry out research in relevant areas of specialization and submit an acceptable thesis (six credit units compulsory).
 - > A student shall present at least one seminar, submit and defend a thesis proposal.
- d) **Eligibility To Proceed To M.Phil / Ph.D And Ph.D Programmes**
A candidate who has satisfied the requirements for the award of the M.Sc. (Environmental Management & Control) shall normally be eligible to proceed to a research-based M.Phil / Ph.D or Ph.D programme in the area of Environmental Management & Control subject to the candidate's average score in the programme meeting the required level prescribed by the Postgraduate School viz:
55-59% for M.Phil / Ph.D
>60% for Ph.D
- e) **Student Enrolment**
Student Enrolment shall be subject to the carry capacity of the Department/Faculty

3.9.3 ACADEMIC STANDARDS

- a) **Academic Regulations**
- i) **Academic Session**
An academic session consists of two semesters. Each semester normally comprises 15 weeks of teaching and two weeks for examinations.

ii) **Modular System**

All Masters Programmes shall be run as Course Unit System. All courses should therefore be sub-divided into more or less self-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 or Unit**

Credits are units attached to a course. One credit unit is equivalent to one hour per week per semester of 15 weeks of lectures or tutorials.

b) **Programmes Requirements**

i) **Registration Procedure**

Students shall normally complete registration for courses for the semester not later than two weeks after the start of the semester. A student cannot withdraw from a course after seven weeks of lectures in a given semester.

A student who fails to sit for examination for which he/she registered is deemed to have failed the course.

A student who fails to sit for more than two courses at the end of a given semester shall be deemed not to have registered for the courses in the first place.

3.9.4 Student Academic Status

A student's academic status shall be determined on the basis of his/her performance at the end of the semester examinations. The following categorization shall be used:

a) **Good Standing**

To be in good standing, a student must in each semester have a cumulative Grade Point Average (CGPA) of not less than 3.00

b) **Withdrawal**

A student whose cumulative grade point average is below 3.00 at the end of two consecutive semesters shall withdraw from the programme.

ii) **Attendance**

In order to be eligible for examination in a particular course, a student shall have attended a minimum of 75% of the total periods of formal instructions delivered for the course.

iii) **Course Evaluation**

In the Masters Programmes, assessment of students' achievements shall be based on:

- > Course Examination
- > Term papers/Seminars;
- .> Other assignments.

iv **Continuous Assessment**

Continuous assessment shall be done through essays, tests, term papers, tutorial exercises, quizzes and homework.

- > Scores from continuous assessment shall constitute 30% of the final marks for courses which are primarily theoretical.

c) **Examinations, Grading Procedure & Results**

i) **Examinations**

- a) In addition to continuous assessment, final examination shall be given for every course at the end of every semester.
- b) The total scores obtainable for every course shall be 100% as follows:

Continuous Assessment	30%	-	40%
Final Examination	70%	-	60%
Total	100%	-	100%

Each course shall normally be completed and examined at the end of the semester in which it is offered.

ii) **Pass Mark**

The minimum pass mark in a course shall be 50%.

iii) **Grading System**

Grading of courses shall be done by a combination of percentage marks and letter grades translated into a graduated system of Grade Point Equivalents (GPE). For the purpose of determining a student's standing at the end of every semester, the Grade Point Average (GPA) system shall be used. The GPA is computed by dividing the total number of credit points (TCP) by the total number of units (TNU) for all the courses taken in the semester. The credit point for a course computed by multiplying the number of units for the course by the Grade Point Equivalent of the marks scored in the course. Each course shall be graded out of a maximum of 100 marks and assigned appropriate Grade Point Equivalent as in the following table:

Credit Units	% Scores	Letter Grades	Grade Points (GP)
Vary according to contact hours assigned to each course per week per semester, and according to load carried by students	70 – 100	A	5
	60 – 69	B	4
	50 – 59	C	3

	Below 50	F	0
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iv) **Presentation of Results**

Results from the Postgraduate School Board of Examiners shall be presented to Senate for approval.

v) **Release of Results**

Results shall be released / published not later than 2 weeks after approval by the Senate.

d) **External Examiner System**

The external examiner system shall be used at the end of the Master programme to assess the courses and thesis.

3.10 RESOURCE REQUIREMENT FOR TEACHING AND LEARNING IN THE PROGRAMME

a) **Academic Staff**

i) **Teacher/Student Ratio**

The staff to student ratio for the Masters programme shall be is 1:10 for effective teaching and learning.

ii) **Academic Staff Work-Load**

An academic staff shall carry a work load not exceeding the maximum prescribed by NUC.

iii) **Staffing**

There should be a minimum of 8 full time staff on ground in a Department. The teaching should have at least a Ph.D Degree with at least one year Postdoctoral University teaching experience.

iv) **Supervision & Teaching**

Only, holders of Ph.D degrees may teach in the Masters programme and supervise Master's thesis.

b) **Non-Academic Staff**

The services of support staff, which are indispensable in the proper running of the programme as well as for administration, are required. It is important to recruit very competent senior technical staff to maintain teaching and research equipments. Universities should pay attention to optimum proportioning of the non-academic staff to avoid redundancy and overstaffing.

c) **Computer Literacy**

With the computer age and application of information technology, both academic and non-academic staff should be sufficiently computer literate.

3.11 Courses

Candidates will be required to register for a minimum of 36 units of course work for the three semesters. These shall consist of 24 units compulsory courses and 12 units of electives. However, for the uniformity of course codes for transcript purposes, it is recommended that all Academic Masters courses should be coded at 800 level.

Core Courses

EMC	National & Global Environmental Issues	2
EMC	Principles & Concept of Environmental Impact Assessment	2
EMC	Environmental Pollution & Control	2
EMC	Ecological Principles for Sustainable Development	2
EMC	Remote Sensing & GIS for Environmental Management & Control	2
EMC	Advanced Biometrics	2
EMC	Research Methodology	2
EMC	Practical/Field work	2
EMC	Seminar	2
EMC	Research Project	<u>6</u>
		24 Units

ELECTIVES

EMC	Environmental Law & Policy	2
EMC	Use of Computer in Environmental Research	2
EMC	Resource Management & Conservation	2
EMC	Environment & Resource Economics	2
EMC	Farming Systems & the Environment	2
EMC	Environmental Analysis	2
EMC	Control & Management of Ecological Disasters	2
EMC	Industrial Waste Water Pollution & Control	2
EMC	Compliance Monitoring & Enforcement	2
EMC	Solid Waste Disposal & Management	2
EMC	Principles of Environmental Auditing & post-project commissioning	2
EMC	Human Health & Ecology	2
EMC	Community Ecology & Ecosystem Management	2
EMC	Human Settlement & Development	2
EMC	Ecological effects of chemicals in the environment	2
EMC	Environmental Aspects of Mining	2
EMC	Soil Conservation & Management	2
EMC	Sustainable Urban Development	2
EMC	Conservation & Biodiversity	2
EMC	Environmental Pollution Studies	2
EMC	Hazardous Waste Management	2

Core Courses

- EMC NATIONAL & GLOBAL ENVIRONMENTAL ISSUES II**
2 Units
Acid rain, ozone depletion, Deforestation, Loss of biological diversity, Trans-boundary movement of toxic wastes. Desertification, Oil pollution in the Niger-Delta, Solid Waste Management, Erosion/Land degradation Hydrofluorocarbons, Radioactivity pollution.
- EMC PRINCIPLES & CONCEPT OF ENVIRONMENTAL IMPACT ASSESSMENT** **2 Units**
Assessment, development and the environment. Guidelines procedures, methods and applications of EIA. Preparation of EIA report.
- EMC ENVIRONMENTAL POLLUTION & CONTROL** **2 Units**
Pollution, pollutants and their sources. Effects of pollution. Environmental degradation. Ecological disasters and their causes. Environmental effects of urbanization, natural climatic change. Environmental effects of industrial development. Effects of agricultural activities. Ecological principles for economic development. Case histories.
- EMC ECOLOGICAL PRINCIPLES FOR SUSTAINABLE DEVELOPMENT** **2 Units**
Nature and objectives of ecological development. Factors of importance in development planning. The relationship of conservation and development. The role of Ecology in development planning. The relationship of ecology and economic development. Economic consideration and environmental problems Application of cost benefit opportunity costs and other economic concepts to environmental problem. Strategies for sustainable living.
- EMC REMOTE SENSING & GIS FOR ENVIRONMENTAL MANAGEMENT & CONTROL** **2 Units**
Introduction, principles, origin and development of Remote Sensing and GIS technologies. Sensors for remote sensing systems. Aerial photography and photogrametry analysis. Multi spectra data system e.g. LANDSAT, SPOT, ERS-1, METEOSAT and NOAA. Handling of satellite imageries. Interpretation of remote sensing data. Application of remote sensing and GIS to environmental monitoring, modeling and assessment. Case studies.

EMC	ADVANCED BIOMETRICS	2 Units
EMC	RESEARCH METHODOLOGY Key considerations in research proposal formulation. Problems identification and research project selection. Formulation of research objectives, literature review methodologies. Quality assurance and control in laboratory analysis. Analytical data management. Elements of chemometrics including modeling. Report writing.	2 Units
EMC	PRACTICALS/FIELD WORK Laboratory and field work on environmental management and control (including pollutant characterization and analysis in various environmental media).	2 Units
EMC	SEMINAR Literature/field search and presentations on topical and special local, national and global environmental issues.	2 Units
EMC	RESEARCH PROJECT	6 Units
Electives		
EMC	ENVIRONMENTAL LAW & POLICY Advanced treatment of EMC 603. Comparative study of environmental laws in some advanced and developing countries e.g USA, Canada, EEC countries, Thailand etc. International laws and conventions.	2 Units
EMC	USE OF COMPUTER IN ENVIRONMENTAL RESEARCH	2 Units
EMC	RESOURCE MANAGEMENT & CONSERVATION Advanced treatment of the PGD course of same title.	2 Units
EMC	ENVIRONMENTAL & RESOURCE ECONOMICS Advanced treatment of the PGD course of same title.	2 Units
EMC	FARMING SYSTEMS & THE ENVIRONMENT Advanced treatment of the PGD course of same title.	2 Units
EMC	ENVIRONMENT ANALYSIS Advanced treatment of the PGD course of same title.	2 Units
EMC	CONTROL & MANAGEMENT OF ECOLOGICAL DISASTERS Advanced treatment of the PGD course of same title.	2 Units

EMC	INDUSTRIAL WASTE WATER POLLUTION & CONTROL	2 Units
	Effluent treatment, sedimentation process, filtration, coagulation and flocculation, membrane separation process, flotation, absorption, non exchange, chemical exudation and reduction, disinfection biological treatment process. Treatment of sludge. Waste water management from chemical, electro-chemical metal treatment processes. Iron and steel industry, gas, coal and tar industry, pharmaceutical industry, textile industry, tanning industry, plastics industry, foodstuff, pulp, paper and wood. Soap and detergents. Petroleum and petro-chemicals, alkaline industry and radioactive waste water.	
EMC	COMPLIANCE MONITORING & ENFORCEMENT	2 Units
	A detailed study of requirements to ensure compliance and enforcement of environmental laws.	
EMC	SOLID WASTE DISPOSAL & MANAGEMENT	2 Units
	Solid Waste Disposal and Management in developed and developing countries. Measurement of environmental effects of solid waste disposal. Solid waste treatment, Landfills. Waste reduction and minimization. Waste recycling. Bio-degradation and bioremediation. Contaminated soil management. Green chemistry.	
EMC	PRINCIPLES OF ENVIRONMENTAL AUDITING & PAST PROJECT COMMISSIONING	2 Units
	Development of environment nexus. Principles and guidelines on environment. Guidelines on environmental audit and post commissioning assessments. Procedures and format for environmental audit reports (EARS).	
EMC	HUMAN HEALTH & ECOLOGY	2 Units
	The meaning of health; health and environment, health and development; demographic issues associated with health and environment; food production: food, diet and health; and contamination; occupational hazards associated with agricultural activities; water and production; maintaining water quality; communicable diseases associated with water; water and sanitation; energy use and health; environmental and health effect of energy production and use; industrial activities and their health hazards; housing and health.	
EMC	COMMUNITY ECOLOGY & ECOSYSTEM MANAGEMENT	2 Units
	Standard community sampling procedures. Pattern of change in terrestrial and aquatic ecosystems, principles of ecological succession. The use of multivariate analyses in community ecology. Niche theory and island geography. Structure, dynamics, and alteration within communities.	
EMC	HUMAN SETTLEMENT & DEVELOPMENT	2 Units
	Advanced treatment of the PGD course of same title.	

EMC	ECOLOGICAL EFFECTS OF CHEMICALS IN THE ENVIRONMENT Advanced treatment of the PGD course of same title.	2 Units
EMC	ENVIRONMENTAL ASPECTS OF MINING Advanced treatment of the PGD course of same title.	2 Units
EMC	SOIL CONSERVATION & MANAGEMENT Soil water movement, soil aeration, drainage and plant growth. Drainage systems and selection cropping systems in relation to soil moisture. Soil moisture determination. Water erosion, wind erosion, sediments and control. Evapotranspiration losses and control.	2 Units
EMC	SUSTAINABLE URBAN DEVELOPMENT Contemporary debates on nature and city, urban environmental problems, urban regeneration and sustainability, the global city and the global environment. Sustainable urban transport.	2 Units
EMC	CONSERVATION & BODIVERSITY	2 Units.
EMC	ENVIRONMENTAL POLLUTION STUDIES Principles of chemical pollution of environmental media (air, soil and water) and associated resources. Water/waste water chemistry, soil chemistry and fate of pollutants, air pollution chemistry, fate, effects and monitoring. Environmental toxicology. Chemistry of persistent toxic substances including persistent organic pollutants (POPs). Environmental indicators of chemical pollution and marker compounds. Remediation of contaminated environment.	2 Units
EMC	HAZARDOUS WASTE MANAGEMENT Types and classification of hazardous substances and wastes. Environmental chemical processes. Chemistry of inorganic and organic hazardous wastes. Collection, storage, transportation treatment and disposal methods/technologies of hazardous wastes. Environmental effects of hazardous wastes disposal. Hazardous wastes control. Waste prevention including waste minimization, treatment and disposal. Waste Recycle/Recovery/Reuse and Cleaner Production Technology.	2 Units
EMC	BIOTECHNOLOGY AND THE ENVIRONMENT Increase in the volume and complexity of waste materials are putting increasing strain on current methods of waste management. This course looks at evolving methods and techniques of utilizing biotechnology to treat a wide range of solid and liquid wastes, and the remediation of contaminated land.	2 Units

3.12 DOCTORATE (Ph. D) Programme Environmental Management & Control

Ph. D is basically a research degree in specialized areas of Environmental Management & Control. There may be course work, which will vary depending on the background of the candidate but would contain the relevant courses that have not been taken at the M.Sc. (EMC) level and in some cases may include courses in related basic sciences as may be prescribed by the Supervisory Committee. Emphasis will however be on the research thesis.

3.12.1 ADMISSION

a) Basic Admission Requirements for Doctoral Programme

- i. All candidates must have five credit passes including English, Mathematics and one science subject at 'O' Level
- ii. Candidates with an M.Sc. degree with a CGPA of at least 3.5 of a 5.0 point scale or 60% weighed average.
- iii. All candidates must demonstrate adequate intellectual capacity, maturity and effective decision making and problem solving potentials possibly through a selection process.

b) Doctor of Philosophy (Ph.D) Programmes

Programmes should be as specified in the individual Universities' prospectus i.e. as available in the University.

c) Areas of Specialization

Candidates can specialize in any of the areas of interest as in the approved programmes of individual Universities.

d) Duration of Programme

- i. A full time Doctoral programme shall run for a minimum of 6 semesters.
- ii. Part-time Doctoral programmes shall run for a minimum of 8 semesters.

e) Requirement of Graduation

Doctorate (Ph.D.) programmes in EMC should primarily be by Research. However, Departmental Postgraduate Committee may prescribe some courses of not more than 12 credit Units to be taken by the candidates. A Doctoral (Ph. D) Thesis of 12 credit units must be defended (compulsorily) before a Panel of Examiners.

f) Domain of the Doctoral Programme

The Doctoral programmes shall be domiciled in the relevant Department.

- g) **Student Enrolment**
Student Enrolments shall be subject to the carrying capacity of the Department and more importantly the availability of qualified Supervisors who must themselves possess a Doctoral (Ph.D) degree.

3.12.2 ACADEMIC STANDARDS

- a) **Academic Regulations**
- i) **Academic Regulation**
An academic session consists of two semesters. Each semester normally comprises 15 weeks of teaching and two weeks for examinations.
- ii) All doctoral Programmes shall be run as Course Unit System. All courses should therefore be sub-divided into more or less self-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) Credits are unit weights attached to a course. One credit unit is equivalent to:
- * one hour per week per semester of 15 weeks of lectures.
 - * two hours per week per semester of 15 weeks tutorial
 - * three to five hours per week of 15 weeks laboratory/field work/studio.
- b) **Programmes Requirements**
- i) **Registration Procedure**
Students shall normally complete registration for courses for the semester not later than two weeks after the start of the semester. A student cannot withdraw from a course after seven weeks of lectures in a given semester without permission from the Dean of Postgraduate School.
- A student who fails to sit for examination for which he/she registered is deemed to have failed the course.
- A student who fails to sit for examination in more than two courses at the end of a given semester should be deemed to have withdrawn voluntarily from the programme.
- ii) **Credit Transfer**
A Ph.D. student who obtained his Masters degree from the same University or other recognized Universities may be allowed up to 24 credit transfer from the masters programme provided the courses were passed with a B minimum grade.

- a) **Good Standing**
To be in good standing, a student must in each semester have a Cumulative Grade Point Average (CGPA) of not less than 3.5.
- b) **Withdrawal**
A student whose Cumulative Grade Point Average is below 3.5 at the end of two consecutive semesters shall withdraw from the programme.
- c) **Attendance**
In order to be eligible for examination in a particular course, a student shall have attended a minimum of 75% of the total periods of formal instructions delivered for the course.
- d) **Course Evaluation**
In the doctoral Programmes, assessment of students' achievements should be based on:
- i) Course Examination
 - ii) Term papers/Research Seminars;
 - iii) Other assignments.
- e) **Examinations, Grading Procedure & Results**
- i) **Examinations**
In addition to continuous assessment, final examination shall be given for every course at the end of every semester.

The total scores obtainable for every course shall be 100% as follows:

Continuous Assessment	30%	-	40%
Final Examination	70%	-	60%
Total	100%	-	100%

Each course shall normally be completed and examined at the end of the semester in which it is offered.
 - ii) **Pass Mark**
The minimum pass mark in any course and thesis shall be 50% and 60% respectively.
 - iii) **Grading System**
Grading of courses shall be done by a combination of percentage marks and letter grades translated into a graduated system of Grade Point Equivalents (GPE). For the purpose of determining a student's standing at the end of every semester, the Grade Point Average (GPA) system shall be used. The GPA is computed by dividing the total number of credit points (TCP) by the total

number of units (TNU) for all the courses taken in the semester. The credit point for a course computed by multiplying the number of units for the course by the Grade Point Equivalent of the marks scored in the course. Each course shall be graded out of a minimum of 100 marks and assigned appropriate Grade Point Equivalent as in the following table:

Credit Units	Scores	Letter Grades	Grade Points (GP)
Vary according to contact hours assigned to each course per week per semester, and according to load carried by students	70 – 100	A	5
	60 – 69	B	4
	50 – 59	C	3
	0 - 49	F	0

iv) **Presentation of Results**

Results from the Postgraduate School Board of Examiners shall be presented to Senate for approval.

v) **Release of Results**

Results shall be released/published not later than 2 weeks after approval by the Senate.

Note: Items b-e as listed above should be adopted as contained in the individual Universities’ regulations for all Doctoral (Ph.D) programmes.

e) **External Examiner System**

The external examiner system shall be used at the end of the Doctoral programme to assess the thesis.

The candidate shall be required to defend the thesis orally (*viva voce*) before a panel of Internal and External Examiners.

3.13 RESOURCE REQUIREMENTS FOR TEACHING AND LEARNING IN THE PROGRAMME

a) **Academic Staff**

i) **Teacher/Student Ratio**

The staff to student ratio for the Ph.D programme shall be is 1:10 for effective teaching and learning.

- ii) **Academic Staff Work-Load**
An academic staff shall carry a work load not exceeding the maximum prescribed by NUC.
 - iii) **Staffing**
There should be a minimum of 8 full time on ground in a Department.
 - iv) **Supervision & Teaching**
Holders of Ph.D Degree with a minimum Postdoctoral experience of not less than three years may teach in the Ph.D programme. However, only holders of Ph.D degree of a rank and not lower than senior lecturer may supervise a doctoral thesis.
- b) **Non-Academic Staff**
The services of support staff, which are indispensable in the proper running of the programme as well as for administration, are required. It is important to recruit very competent senior technical staff to maintain teaching and research equipments. Universities should pay attention to optimum proportioning of the non-academic staff to avoid redundancy and overstaffing.
 - c) **Computer Literacy**
With the computer age and application of information technology, both academic and non-academic staff should be sufficiently computer literate.

3.14 GENERAL FOR ALL PGD, MASTER AND Ph. D PROGRAMMES

3.14.1 ACADEMIC PHYSICAL SPACE AND EQUIPMENT REQUIREMENTS

Physical Facilities

- i) Laboratories, preparation rooms, stores, workshop, dark rooms, studios and other specialized spaces should be provided.
- ii) Computer Room, including Virtual Library facilities.
- iii) Resource Rooms to enhance academic development.

Office accommodation

The standard space requirement as shown below shall apply.

Position/Rank	m ²
Professor's Office	18.50
Head of Department's Office	18.50
Tutorial Teaching Staff Office	13.50
Other Teaching Staff Space	7.00
Technical Staff Space	7.00

Secretarial Space	7.00
Seminar Space/per student	1.85

Classroom Space and Examination Theatres

- * Adequate classrooms should be provided with enough chairs and tables.
- * Examination halls and theatres should be provided to minimize the rate of examination malpractices.

Equipment

For effective learning the following equipment should be provided:

- * Scientific equipment for specific areas of specialization, the concept of central laboratories and shared facilities through linkages and collaboration should be encouraged.
- * Computers
- * Photocopying Machines
- * Video Cameras
- * Tape recorders
- * Internet and E-Mail facilities
- * Audio Visuals.

3.14.2 LIBRARY FACILITIES

There should be adequate physical and virtual library facilities. These include current journals, handbooks, textbooks, manuals and other reference materials in sufficient numbers.

3.14.3 LEARNING OUTCOMES FOR PGD, MASTERS AND DOCTORAL PROGRAMME

Comprehensive knowledge of areas of specialization

- i) Graduates should have comprehensive knowledge of their areas of specialization, encompassing an understanding of the theoretical foundations and quantitative tools of the areas of specialization, as well as the ability to apply this knowledge to actual problems.
- ii) Graduates should be able to demonstrate problem solving capacity using multidisciplinary approaches in an innovative and creative way.
- iii) A candidate should display a comprehensive knowledge of area of specialization and should have acquired entrepreneurial skills to equip them for self sufficiency and also meet the needs of public and private sectors in Nigeria and beyond.

Problem Solving Capacity

Graduates should be able to demonstrate problem solving capacity through literal, critical, innovative and creative connections among diverse fields of study in analyzing problems using multidisciplinary approaches.

Behavioural Skills

Graduates should understand human behaviour in organization. They should:

- * have the ability to work in a team;
- * internet effectively in group situations;
- * be deposed to mentoring and peer review;
- * be able to appreciate constructive criticism.

3.14.4 COURSE STRUCTURES

Course Structures (i.e. the course codes and course content/descriptions/synopsis should be as contained in the individual University’s programme/brochures/prospectus for the various postgraduate programme i.e. PGD, Masters & Ph.D programmes.

However, for the Uniformity of course codes for transcript purposes, the following is recommended:

PGD	600 Level
Professional Masters	700 Level
Academic Masters	800 Level
Ph.D	900 Level

3.15 INSTRUMENTS OF ACCREDITATION

3.15.1 INTRODUCTION

The term quality simply means fitness for purpose. It means that a product or service fits the purpose according to predetermined standards. Quality as fitness for purpose envisions quality in terms of fulfilling a programme’s requirements, needs or desires and is usually based on the ability of an institution to fulfill its mission or a programme of study to fulfill its aims.

Quality is being used to designate the level of acceptable standard in almost every industry such that quality assurance has become a metaphor for the management of the maintenance of quality of goods or services at a good standard. Historically, quality was maintained through control mechanisms. However, in recent years, the practice of quality control has progressively moved from an ex post activity to a more proactive process, known as quality assurance. The industry developed the concept of *Total Quality Management (TQM)* to capture three key components of quality, namely: *quality control*, *quality assurance* and *continuous monitoring and evaluation*. TQM is not industry-specific; rather is a phenomenon or practice that has universal applicability wherever services are rendered or products produced.

In the Nigerian University System, one of the functions of the National Universities Commission, as the regulatory agency of the programmes (undergraduate and Post-Graduate) offered in the entire University system. As with industry, quality assurance in the university system can be both internal and external. The external mechanism is constituted by accreditation conducted by the NUC regulates programme by ensuring that

the universities establish only programmes for which they have the requisite curriculum as well as human and material resources. The structure of the internal institutional mechanism is comprised of the senate. The external examiner system provides additional assurance that the quality of academic programmes of the university is acceptable to academic peers across the university system.

Accreditation of academic programmes entail peer assessment of the programme against pre-determined standards. The standards are often referred to as Minimum Academic Standards and provide the benchmarks against which the quality of the programme is measured.

The Environmental Management and Control Studies is one of the postgraduate programmes discipline in the environmental sciences offered in most Universities in Nigerian. This programme aims at producing quality professional managers and academics for both the public and private sectors of the economy. In order to achieve the aims of establishing this programme and to assess the characteristics of the programme, the accreditation criteria and weight stated below should be used in the assessment of the Environmental Management and Control programme.

3.15.2 Criteria For Assessment (Total: 100 points)

a) ACADEMIC CONTENT

- i) Clarity of Mission, Philosophy, Aims and Objectives of Programme (4):** The Mission, Philosophy, Aims and Objective of the programme must be explicitly expressed and clearly defined.
- ii) Admission Requirements**
The degree to which students admitted into the programme meet prescribed Minimum Admission Requirements should be assessed.
- ii) Academic regulations**
The rules and regulations guiding the conduct of the M.Sc Programme should be explicitly stated in a postgraduate prospectus. The students' level of awareness of the programme's rules and regulations should be gauged as well.
- iv) The Curriculum**
The curriculum of the Postgraduate Environmental Studies should state very clearly the cognitive, affective and psychomotor skills to be acquired by the students. The curriculum should have adequate mechanisms to properly prepare students to adapt to the practical world of management. The adequacy of the curriculum content to produce competent managers should be assessed.

b) **ASSESSMENT**

i) **Course Work**

Assessment should be made on the efficacy of the course work mode of assessment.

ii) **Students project/thesis**

The standard of essays, examinations, tests and projects should be evaluated to ascertain the quality of the programme.

iii) **External Examination System**

The efficiency of the external examination system should be ascertained. The quality of the external examiners used should be assessed (The External Examiner's Report).

c) **STAFFING:**

Academic staff

The quality and credibility of the academic staff should be examined, using the following indices.

i) Staff : Students Ratio (1:20)

ii) Staff Mix of 20:30:50

iii) Academic staff with Doctorates

Percentage of faculty with a doctoral degree. A minimum of 75% of the teaching staff should have doctorate degree in relevant disciplines.

vi) Staff Development

There should be proven evidence of a well established staff development programme. The accreditation panel should determine the percentage of staff that have benefited from the scheme.

Non-Teaching Staff

The quality of the non-teaching staff available for the programme should be assessed.

d) **COURSE DELIVERY AND FACILITIES**

i) **Course delivery**

The modes of course delivery such as lectures, seminars, group projects, in- company training, etc, have being adequately used in training the Postgraduate Environmental Studies students. The Panel should assess this and measure the effectiveness and adequacy of the various course delivery modes.

- ii) **Teaching and Research Facilities**
Assessment of Teaching and Research Facilities
 - iii) **Physical Facilities**
Assessment should be made on the degree of availability of facilities such as classrooms, seminar rooms, lectures' office accommodation, ICT tools and equipment.
 - iv) **Library**
The quality, relevance, currency and quantity of books and international academic and scholarly journals available for the programme should be assessed to determine their adequacy or otherwise.
 - v) **Funding**
The adequacy of funds available for the programme should be assessed. How far is the postgraduate school able to assist indigent student financially.
- e) **EMPLOYERS/ALUMNI RATING**
- i) M.Sc Alumni Activity Availability of feedback from Alumni, employers and sponsors should be obtained and used to assess the level to which the programme has produced the required quality of managers. Employability of graduates; ability to secure employment for their graduates.
 - ii) Placement Success: The percentage of preceding year graduates that gained employment with or without the help of career advice.
 - iii) Employer Recommendation Employers of M.Sc graduates would be asked to recommend three architectural schools from which they would recruit Postgraduate Environmental Studies graduates. The number of votes received by each school will be aggregated and reported.
 - iv) Career Progress: The degree to which alumni have moved up the career ladder three years after graduating. Progression is measured through changes in level of seniority and the size of the company of organization in which they are employed.

3.16 ACADEMIC PHYSICAL SPACE & EQUIPMENT REQUIREMENTS

- i) **Professional Physical Facilities Requirements**
 - a) Computer Room, including Virtual Library facilities.
 - b) Board Room to enhance professional development, similar to moot court.

ii) **Office Accommodation**

The standard space requirement as shown below shall apply.

Position/Rank	m²
Professor's Office	18.50
Head of Department's Office	18.50
Tutorial Teaching Staffs Officer	13.50
Other Teaching Staff Space	7.00
Technical Staff Space	7.00
Secretarial Space	7.00
Seminar Space/Per Student	1.85

iii) **Classroom Space and Examination Theatres**

- Adequate classrooms should be provided with enough chairs and tables.
- Examination halls and theatres should be provided to minimize the rate of examination malpractices.

iv) **Equipment**

For effective learning, the following equipment should be provided:

- Computers
- Photocopying Machines\video Camera
- Laboratory and field instruments
- Internet and e-mail Facilities

3.17 LIBRARY FACILITIES:

There must be adequate library facilities to cater for the interest of all the courses in the programme. These include current journals, handbooks, textbooks, manuals, codes of practice, standards and specifications, etc. in sufficient numbers.

3.18 LEARNING OUTCOMES FOR THE PROGRAMMES

Comprehensive knowledge of areas of specialization

Graduates should have a comprehensive knowledge of their areas of specialization, embodying an understanding of the theoretical foundations and quantitative tools of the areas of specialization, as well as the ability to apply this knowledge to actual problems.

Problem solving capabilities

Graduates should be able to demonstrate problem solving capacity through lateral, critical, innovative and creative connections among diverse fields of study in analyzing problems.

Global perspective

Graduates should have a global perspective, based on an understanding of both the domestic and global environments of the organization.

Communication competency

Graduates should be able to communicate effectively both graphically in writing and orally in ways appropriate for a variety of objectives and audiences.

Ability to manage information

Graduates should have an understanding of advances in information technology and be able to effectively integrate the innovations in their decision-making processes.

Social responsibility

Graduates should understand and demonstrate the ethical considerations and environmental ramifications of their decisions.

Behavioural skills

Graduates should understand human behaviour in organizations. They should:-

- Have the ability to utilize leadership skills effectively
- Interact effectively in group situations
- Manage in culturally diverse environments
- Help others develop their skills
- Resolve conflict effectively and act independently in low feedback environments

4. ESTATE MANAGEMENT

4.0 POSTGRADUATE PROGRAMMES IN ESTATE MANAGEMENT

4.1 INTRODUCTION

The National Universities Commission (NUC), as the Regulatory Agency for University Education in Nigeria, has as one of its mandates, the definition and maintenance of academic standards. The Commission has in the past organized the definition of Minimum Academic Standards and subsequently accreditation for all approved Undergraduate Programmes offered in the Nigerian Universities. As a follow up to the success recorded in the Undergraduate Programmes, the Commission defined Benchmark and Minimum Academic Standards for Postgraduate Programmes in Nigeria. The Benchmarks and Minimum Academic Standards (BMAS) for the Postgraduate Programmes in Estate Management have been put in place for future accreditation of all Postgraduate Programmes offered in the Nigerian Universities.

The Benchmark statements contained herein, describe the minimum requirements each University is to attain in respect of the various categories of Postgraduate Programmes in Estate Management offered. Individual Universities may modify them for Part-time students, or in response to their peculiarities, provided they do not go below the minimum benchmark herein specified.

4.2 PHYLOSOPHY

Estate Management spans the six concepts of land, namely: Physical, Economic, Abstract, Socio-political, Spiritual and Legal and is therefore, inter-alia, concerned with valuation, rating and taxation, development, utilization, regeneration and conservation of land resources, buildings, other structures, facilities, and specialized valuations of minerals, plant and machinery, and insurance. The critical issue of feasibility and viability appraisals of proposed developments, investments, developmental decisions is well articulated as it involves land development. Estate and development finance, project management including critical path analyses are amongst the core Estate Management courses.

The philosophy of the Estate Management Postgraduate Programmes is to develop highly skilled professionals and intellectually well prepared, fully sharpened, well motivated and highly focused top level manpower in the wide and intensive field of Estate Management through well synchroneshed levels of Postgraduate Programmes which not only ensures maximum development of individual student but leads those whose developmental potentials qualified for movement to a higher level of development to be a position to do so.

4.3 AIMS AND OBJECTIVES

The aims and objectives are as respectively specified in appropriate sections below for PGD, M.Sc/M.Tech and Ph.D in Estate Management.

Generally, however, the programmes are aimed at:

- i. Developing highly skilled professional Estate Surveyors and Valuers for public, private, corporate and international Organizations and top academics for Higher Educational Institutions.

- ii Providing students with knowledge and skill to enhance their performance and to enable them to assume broader responsibility in the rapidly changing built and other dimensions of environment in Nigeria.
- iii Generation and dissemination of knowledge required for understanding and practical analysis of problems related to built, planned and other dimensions of environment and investments in them, as well as tapping estate and development finance thereof.
- iv Producing holders of Estate Management higher qualifications who are capable of applying appropriate principles and techniques of problems solving expected of their respective levels of Postgraduate attainment.
- v Producing highly skilled manpower in Estate management capable of facing a broad spectrum of challenges in various aspects of Estate management nationally and globally which require ability to reason effectively from first principles for effective and viable solutions within the Nigerian cultural and legal realities.
- vi To provide an educational process that recognizes and asserts human needs and prudent land use planning, investment, development, regeneration and conservation of land and land resources.

4.4 POSTGRADUATE PROGRAMMES OFFERED:

- (a) Postgraduate Diploma (PGD) in Estate Management.
- (b) Masters in Real Estate (Professional)
- (c) Master of Science (M.Sc.) or of Technology (M.Tech) in Estate Management
- (d) Doctor of Philosophy (Ph.D) in Estate Management.

4.4.1 POSTGRADUATE DIPLOMA (PGD) IN ESTATE MANAGEMENT

(i) PHILOSOPHY:

The Postgraduate Diploma in Estate Management programme is flexibly designed as both a terminal and conversion programme to motivate and suit individual abilities and aspirations of students.

(ii) AIMS AND OBJECTIVES

The aims and objectives are:

- i. To help those who may wish to make up for their deficiencies in their first degree and in so doing enable them to pursue Masters Degree in Estate Management.

To bridge the gap between the Higher National Diploma and first Degree in Estate Management in order to allow holders of the former to pursue higher degree programmes, or alternatively practice as Estate Surveyors and Valuers with enhanced academic background.

- ii. To provide opportunities for further studies and training in Estate Management for holders of direct finals of the Professional Examinations

of Nigerian Institution of Estate Surveyors and Valuers or other equivalent professional bodies.

- iii. To provide opportunities for people in allied professions/disciplines who want to change professional careers to estate management.

4.4.2 ADMISSION REQUIREMENTS

- i. Candidates with third class Honours or Pass Degree in B.Sc/B.Tech or equivalent in Estate Management from a recognized university.
- ii. Candidates with minimum of Second Class Honours lower Degree in related disciplines such as Architecture, Urban and Regional Planning, Building, Quantity Surveying, Accountancy, Geo-informatics and Surveying and Economics.
- iii. H.N.D (Upper Credit and above) in Estate Management from a recognized Polytechnic or College of Technology.
- iv. Direct finals of the Professional Examinations of the Nigerian Institution of Estate Surveyors and Valuers (NIESV).
- v. In addition to achieving a minimum of credit at O' Level in English and Mathematics, all candidates must have attained a satisfactory level of performance in the universities admission test and/or interview.

4.4.3 DURATION OF PROGRAMME

- i. Full-time PGD Programme should run for a minimum of three (3) semesters
- ii. Part-time PGD Programme should run for a minimum of (4) semesters

4.4.4 REQUIREMENTS FOR GRADUATION

A candidate must have fulfilled the following conditions to be awarded the Postgraduate Diploma:

The candidate must pass a minimum of 40 credits Units made up of the following:

- | | |
|---|--|
| > | 32 Units of Core Courses |
| > | 4 Units of Electives Courses |
| > | 4 Units of PGD Research Project/Report |
| | Total - 40 Units |

a) Domiciliation of the Programme

The Postgraduate Diploma programme shall be domiciled in the relevant Department of Faculty depending on the University.

b) **Student Enrolments**

This should not be more than 40% of Postgraduate enrolment of Departments/Faculty.

4.4.5 ACADEMIC STANDARDS

a) **Academic Regulations**

b) **Academic Session**

An academic session consists of two semesters. Each semester normally comprises 15 weeks of teaching and two weeks for examinations.

c) **Course Unit System**

All Postgraduate Diploma Programmes shall be run using the Course Unit System. All courses should therefore be sub-divided into more or less self-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.

d) **Definition of Credit or Unit**

Credit units are weights attached to a course. One credit unit is equivalent to:

- One hour per week per semester of 15 weeks of lectures
- Two hours per week per semester of 15 weeks tutorial
- Three to five hours per week of 15 weeks laboratory/field work/studio.

Cumulative Grade	Class of Diploma
4.50 - 5.00	Distinction
3.50 – 4.49	Credit
3.00 – 3.49	Merit/Pass
Below 3.00	Fail

COURSES

PGD Estate Management

First Semester

Course Code	Course Title	Units
Est. Man 610 -	Principles of Valuation	- 2 Units
Est. Man 611 -	Research Methodology	- 2 Units
Est. Man 621 -	Property Rating and National Taxation	- 2 Units
Est. Man 631 -	Property Management	- 2 Units
Est. Man 641 -	Urban Land Economics	- 2 Units

Est. Man 651	-	Estate and Development Finance	-	2 Units
Est. Man 661	-	Legal Studies 1	-	2 Units
Est. Man 681	-	Feasibility/Viability Appraisals	-	2 Units
Est. Man 671	-	Introduction to computer Application	-	2 Units
Est. Man 672	-	Elective	-	2 Units

20 Units

Second Semester

Course Code		Course Title		Units
Est. Man 612	-	Advanced Valuation		2 Units
Est. Man 622	-	Applied Town and Country Planning	-	2 Units
Est. Man 632	-	Comparative Land Policies	-	2 Units
Est. Man 642	-	Land Use and Resources Development	-	2 Units
Est. Man 652	-	Legal Studies (Nigerian Land Law)	-	2 Units
Est. Man 662	-	Plant and Machinery Valuation	-	2 Units
Est. Man 672	-	Advanced Feasibility/Viability-Appraisals	-	2 Units
Est. Man 692	-	Elective	-	2 Units
			-	16 Units

Third Semester

Est. Man 682	-	PGD Research Project/Report	-	4 Units
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Appropriate number of electives advised by the department according to the background of a candidate may be selected from the following:

- Building Construction, Methods and Materials.
- Building Services and Maintenance.
- Elements of Surveying.
- Architectural Graphics
- Professional Practice.
- Principles of Agric Production
- Principles and application of G.I.S.

4.4.6 RESOURCE REQUIREMENT FOR TEACHING AND LEARNING IN THE PROGRAMME

a) Academic Staff

i) Teacher/Student Ratio

The staff to student ratio for the Postgraduate programme is 1 to 10 for effective teaching and learning.

ii) Academic Staff Work-Load

An academic staff shall carry a work-load of not exceeding the maximum prescribed by the Senate.

iii) **Staffing**

There should be a minimum of 8 full time staff on the ground in a Department. The teacher should have at least an M.Sc. degree with at least three years university teaching experience and rank not lower than lecturer II.

b) **Non-Academic Staff**

The services of support staff, which are indispensable in the proper running of the programme as well as for administration, are required. It is important to recruit very competent senior technical staff to maintain teaching and research equipment. Universities should pay attention to optimum proportioning of the non-academic staff to avoid redundancy and overstaffing.

c) **Computer Literacy**

With the computer age and application of information technology, both academic and non-academic staff should be sufficiently computer literate.

d) **Student Course Evaluation**

There is a need to have students to evaluate the course at the end of the semester to know how well the course has been delivered and also for the general improvement of the course. The Dean of PG School should set up the modalities for carrying out the evaluation.

4.4.7 COURSE SYNOPSES FOR PGD

Est. Man 610 - Principles of Valuation:

Concepts of value. The functions of a valuer. Mathematical foundation, statistical and other basic frame-works for valuation. The bases and methods of valuing various interests and estates in landed property. Valuation of assets of a company, going concern valuation. Valuation for mergers, insurance, mortgage, rating and taxation, probate etc. Surrenders, extensions and renewals of leases. Rent control regulations and the effects of similar statutory enactments on value of properties. Statutory bases for valuations for compulsory purchase. Valuations of special types of properties. Principles guiding the valuation of agricultural property. Principal types of landed property in Nigeria and out-goings common with them. Capital expenditure. Computation of values without the use of valuation tables

Est. Man 611 - Research Methodology:

The nature and purpose of research. Types of research. The basic competence required of researchers, The basics of research. Research methods. Data collection, analysis and presentation. Research Hypotheses and questionnaire construction. Theory and practice of urban research design and operations. The use of statistical analysis in problem solving. . Multiple and Partial Correlations, analysis of Time series data; simple and multiple regression analysis and their applications. Introductory treatment of computer and online resources. Organization and presentation of research project report.

Est. Man 621 - Property Rating and National Taxation:

The place of Property Rating in local government finance. The nature, content; preparation and amendment of the valuation list. The basis and methods of Rating

Valuations. Rating laws and appeals. Income tax, nature and incidence Allowance and deductions Assessment of owners and occupiers of landed property: Taxation of capital, Estate duty, Capital transfer tax. Statutory provisions and Case Law. Land taxation reforms.

Est. Man 631 - Property Management:

The proprietary land structure of Nigeria compared with those of select countries of the world. Leaseholds compared and contrasted with rights of occupancy: Aims, policies and techniques of private and public land administration and management. Preparation of schedule of dilapidations. Maintenance and upkeep of properties. Laws of Housing, Dilapidations, Landlords and Tenants. Portfolio advice. Basic principles and techniques of facilities management. Principles applicable in managing public estates. Proprietary land capital, income and associated wealth. The development and redevelopment processes. Impact on proprietary interest in land of Government development plans, Land policy and fiscal policies. An appreciation of the implications for property management of legislations pertinent to real estate.

Est. Man – 641 Urban Land Economics:

Economics of urbanization Theories of urban structures and growth. Location of Economic activities. Urban Policy. The urban land market. Economic aspects of urban valuation. Transportation and economic development. Housing laws, maintenance and policies.

Est. Man – 651 Estates and Development Finance:

Estate capital: Traditional and contemporary sources of real estate and development finance. Internal and consociate estate and development funds. Contractor financing. Insurance, other banking and institutional finance. Bank as involved in estate and develop fiancé. Securitization and its role in provision of estate and develop finance. The effects of government policies and legislative enactments.

Est. Man – 661 Legal Studies 1:

Principles of law of Contract and Principles of law of Tort. Formation of contract. Void, voidable and unenforceable contracts. Termination of contracts remedies for breach. Basic Principles of Tort. Tort affecting landed property. Negligence, nuisance. trespass, liability for animals. Housing collapse and dangerous premises.

Est. Man 671 - Feasibility and Viability Appraisals:

Concept of Decision Appraisals. Feasibility and Viability indicators. Traditional and Modern Feasibility and Viability. Appraisals techniques. Residual Valuation, Developmental appraisals, Cost-Benefits, analysis, Discounted cash flows and other techniques. Forecasting of costs and benefits. Risk analysis. Sensitivity tests. Follow-up Appraisals, Critical path analysis.

Est. Man 621 - Advanced Valuation:

Application of valuation principles and methods to advanced examples of Valuation. Principles involved in establishing, the value to government, a company or partnership. Bases and methods of assessing agricultural, commercial and residential properties.

Valuations for way leaves, mortgages, going concern, insurance and developed properties. Statutory valuations. Valuer as an expert witness.

Est. Man 622 - Applied Town and Country Planning:

Application of general principles to the development of urban and rural communities. The respective components of a town and a rural community and their respective space and sitting requirements. Traffic and transport planning. Site planning and physical ordering of residential, commercial industrial, recreational areas, including road layout, sizes and grouping of buildings and open spaces etc. Architectural appreciation and landscaping. Central area problems such as urban congestion and slums. Housing. Laws of town and country planning and housing Public participation. Valuation of financial implications of development and redevelopment. The role of private and public developers. Compensation – Betterment controversies and their resolutions. Impact of government policies and actions. Field/project work whereby real urban, rural and regional planning problems are studied under guidance and practical solutions proposed by the students.

Est. Man 632 - Rural and Urban Land Policies

Land policies in the context of land ownership motives. Rural and Urban land policies compared and contrasted. Comparisons of Nigerian land policies with those of select countries of the world.

Est. Man 642 – Land Use and Resources Development

Proprietary land use analysis. Social and legal theories of land. The influence of climate, Economic development, socio-political order. Land tenure and communication on the use of land. Competitive and complementary land uses. Population and land area ratios, national and local differences. The exploitation of land resources. Rural and urban land uses and allocation. Development and redevelopment. The supply of land. Demand for land. Land resources in Nigeria and land use in the Nigerian economy. Implementation and program of land Reforms in selected countries. National Land Policy. Conservation of natural resources. Soil erosion. Environmental Pollutions and Controls. Environmental impact assessments.

Est. Man 652 - Legal Studies 11

Elements of Land Law: The Principles of English Land Law. Outline of the development of freehold and leasehold estate, and interests. Legal and equitable interest in land, pledges, pawns, mortgages and their nature in common law, equity and Nigerian law. The Role of land in indigenous Nigerian society & economy. The Nature of landholdings. Statutory provisions dealing with land registration. Acquisition and Administration. Compulsory Acquisition and State Grants. Housing laws. The Impact of Town and country Laws. Arbitration and Awards. The nature of arbitration, its origin and application to valuation. Expert evidence and Proof of evidence.

Est. Man 662 - Plant and Machinery Valuation:

Definition and identification of plant and machinery. Survey and determination of functional and economic lives and efficiency of plant and machinery. Various purposes for which plant and machinery valuation may be required. Different methods of valuing plants and machinery.

Est. Man 672 - Advanced Feasibility and Viability Appraisals:

The concept of decision valuation. Applications of feasibility and viability appraisals techniques to property investment appraisals and decisions. Sensitivity analysis. Critical path analysis. Follow- up appraisals.

COURSE SYNOSES FOR PGD ELECTIVE COURSES:**Building Construction, Methods and Materials:**

Draughtsmanship and scale drawing Types and construction of foundations. Wall construction. External and internal finishes. Formation of opening in walls Construction of ground and suspended floors. Floors and ceiling finishes. Carpentry joints. Construction of doors and windows. Roof construction. Flat and pitched roofs. Roof coverings. Visits to constructional sites. Reinforced concrete construction. Formwork. Metal doors and windows. Patent glazing. Water supply to building. Internal plumbing. Hot and cold water supply. Lighting, ventilating and air conditioning. Repairs and restoration of building. Materials manufacture and source of supply. Traditional and contemporary Nigerian buildings. Visits to places of manufacture of building materials.

Building Services and Maintenance:

Drainage, water supply, electricity and gas supply. Refuse and refuse disposal – as technical means employed to meet human needs.

Land Surveying:

Fieldnotes. Maps reading Direction of line. Chain surveying, compass traverse, offsets, graphic trilateration. Leveling, contours, profiles, cross sections. Simple field operations with the theodolite. Basic topography and plane table surveys. Determination of areas and volumes. Basic principles of photogrammetry. Preparation and enlargement of plans. Relevant computations.

Architectural Graphics:

A laboratory course in mechanical drawing descriptive geometry, perspective and shades and shadows including free-hand drawing. Autocards.

Professional Practice:

The law and ethical rules and codes of conduct guiding the practice of estate surveying and valuation profession in Nigeria. Comparison with select countries of the world. Critical examination of legal stipulations guiding the above. Estate management professional practice as a classic example of entrepreneurial business organization developed and strictly operated on ethics and morality.

Principles of Agric Production:

Physical, chemical and biological properties of soils. Soil fertility and classification. Cropping systems. Survey of major crop plants. Crop valuation. Identification of forest species. Ecology and adaptation; nursery and planting techniques. Principles of production, harvesting and utilization.

4.5 MASTERS IN REAL ESTATE (PROFESSIONAL)

4.5.1 PHILOSOPHY

The philosophy of the Master of Real Estate (Professional) is to give opportunities for professional Estate Surveyors and valuers to acquire more sophisticated and advanced tools and techniques in several aspects of Estate Management. This acquisition will aid sound decision making. This course is targeted towards professionals in the public service, corporate, institutional and international organizations. It is a terminal qualification and does not qualify a holder to proceed to a Ph.D.

(a) **Basic Admission Requirements**

The criteria for admission into the Master of Real Estate will be as follows:

- i) Matriculation requirements of individual universities which must be 5 '0' level credits including Mathematics and English.
- ii) Candidates with at least third class Bachelor's Degree from an approved university.
- iii) Candidates with a PGD passed at credit level (i.e. 3.0 of 5.0 point scale, or 50% on weighted percentage average).

(b) **Duration**

- i. A full-time Master of Real Estate should run for minimum of four (4) semesters and a maximum of six semesters.
- ii. Part-time masters programme should run for a minimum of six (6) semesters and maximum of eight (8) semesters.

(c) **Requirements for Graduation**

To be awarded a master of Real Estate a candidate must pass a minimum of 44 units made up as follows:

Core courses	-	34 units
Elective	-	4 units
Project	-	6 units
Total	=	44

In addition the candidate shall present at least one seminar and submit and defend the project. They will take the same lectures with other categories of masters degree. The difference between them and the academic masters programme is that they do not undertake research for, and prepare, submit and defend thesis/dissertation. They are required only to submit and defend a project report.

First Semester

Course Code	Course Title	Units
Est. Man 710	- Research Methodology	- 2 Units
Est. Man 711	- Advanced Valuation	3 Units
Est. Man 712	- Advanced Feasibility and Viability Appraisals	- 2 Units
Est. Man 813	- Advanced Property Management	- 2 Units
Est. Man 814	- Quantitative Techniques in-Estate Management.	- 2 Units
Est. Man 816	- Property Investment Appraisal	- 2 Units
Est. Man 717	- Elective	- 2 Units
Total		= 15 Units

Second Semester

Course Code	Course	Units
Est. Man 821	- Facilities Management	- 2 Units
Est. Man 722	- Plant and Machinery Valuation	- 2 Units
Est. Man 723	- Advanced Property Rating and Land Taxation	- 2 Units
Est. Man 724	- Land Policies	- 2 Units
Est. Man 725	- Applied Town/Country Planning	- 3 Units
Est. Man 726	- Project Management	- 2 Units
Est. Man 727	- Elective	- 2 Units
Total		= 15 Units

Second Year 1st Semester Courses (i.e. Third Semester)

Course Code	Course Title	Units
Est. Man 731	- Advanced Real Estate Portfolio-Management	2 Units
Est. Man 733	- Advanced Land Use and-Resource Development	2 Units
Est. Man 735	- Mineral Valuations	2 Units
Est. Man 736	- Real Estate Development-Finance and Securitization	2 Units

Total = **8 Units**

Master's Project 6 Units

GRAND TOTAL = **44 Units**
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Any two Electives may be selected from the following:

Est. Man 717/727 (-	Advanced Agricultural Valuations	2 Units
(	-	Valuation of Cultural Artifacts and	
(		Sacred Objects and grounds	2 Units
(	-	Environmental Impacts Appraisals	2 Units
(	-	Issues in Land Economy	2 Units
(	-	Insurance Valuations	2 Units
(	-	Administration of Public Properties	2 Units
(	-	Principles and application of G.I.S	2 units

4.6 MASTER OF SCIENCE (M.Sc) OR OF TECHNOLOGY (M.Tech) IN ESTATE MANAGEMENT

4.6.1 PHYLOSOPHY

The philosophy of the M.Sc or M.Tech Estate Management programme is to develop highly skilled professional Estate Surveyors and Valuers who are academically firmly grounded in research for effective service, corporate, institutional and international organizations, universities, educational research institutions and high level private practice.

4.6.2 AIMS AND OBJECTIVES

Apart from general aims and objectives enunciated in 5.1.2 above, the M.Sc/ M.Tech degree in Estate Management is specifically aimed at achieving the following objectives:

- i. Providing academics and Professional Practitioners with opportunities for more advanced studies and research with a view to acquiring a body of more advanced and sophisticated analytical tools which are essential for sound and effective decision making in various aspects of Estate Management and in equipping them for academic researches in various aspects of estate management, to enable them solve new and challenging problems from first principles in an ever changing economic, socio-political, cultural and legal environments in the country and increasingly globalized world.
- ii. Producing high level manpower capable of formulating and/or executing viable and prudent policies demanded by the various aspects of Estate Management in the society.
- iii. Equipping graduates with the necessary tools and motivating them to be motivators for the advancement of knowledge in the various aspects of Estate Management.
- iv. Producing well interested and well motivated individuals with the right attitude, competences and skills to function effectively as academics in Estate Management studies at universities and other institutions of higher learning.
- v. To produce competent, skilled and creative professionals who are capable of meeting the challenges of creating viable, healthy, workable, comfortable and

aesthetically and symbiotically sound environment and practicing as very competent Estate Surveyors and Valuers in a challenging environment and globalized world.

4.6.3 ADMISSION REQUIREMENTS

a) **Basic Admission Requirements for M.Sc/M.Tech Programme**

The criteria for admission into the M.Sc/M.Tech. programme will be as follows:

- i) Matriculation requirement of individual universities which must be 5 O' level credits including Mathematics and English.
- ii) Candidates with at least 2nd Class Honours Lower Division Bachelors degree in B.Sc/M.Tech or equivalent obtained from an approved University.
- iii) Candidates with a PGD at credit level pass (i.e. 3.5 of 5.0 scale) or 60% on weighed percentage average.

4.6.4 Duration of Programme

- i. A full time M.SC/M.Tech Programmes should run for minimum of 4 semesters
- ii. Part-time M.Sc./M.Tech programmes should run for a minimum of 6 semesters

4.6.5 Requirement of Graduation

To be awarded a Masters of Science or M.Tech in Estate Management a candidate must pass a minimum of 50 credit units made up as follows:

34 unit of Core courses	-	34
4 unit of 2 Elective courses carrying	-	4
Thesis	-	<u>12</u>
Total	=	<u>50</u>

Carry out research and submit a Dissertation/thesis based on an original work on an approved topic. The candidate must successfully defend the dissertation/thesis in an oral examination.

First Year Courses

M.Sc/M.Tech. Estate Management

First Semester

Course Code	Course Title	Units
Est. Man 810	- Research Methodology	- 2 Units
Est. Man 811	- Advanced Valuation	3 Units
Est. Man 812	- Advanced Feasibility and Viability Appraisals	- 2 Units
Est. Man 813	- Advanced Property Management	- 2 Units
Est. Man 814	- Quantitative Techniques in-Estate Management.	- 2 Units
Est. Man 816	- Property Investment Appraisal	- 2 Units
Est. Man 817	- Elective	- 2 Units
Total		= 15 Units

Second Semester

Course Code	Course	Units
Est. Man 821	- Facilities Management	- 2 Units
Est. Man 822	- Plant and Machinery Valuation	- 2 Units
Est. Man 823	- Advanced Property Rating and Land Taxation	- 2 Units
Est. Man 824	- Land Policies	- 2 Units
Est. Man 825	- Applied Town/Country Planning	- 3 Units
Est. Man 826	- Project Management	- 2 Units
Est. Man 827	- Elective	- 2 Units
Total		= 15 Units

Second Year 1st Semester Courses

(i.e. Third Semester)

Course Code	Course Title	Units
Est. Man 831	- Advanced Real Estate Portfolio-Management	2 Units
Est. Man 833	- Advanced Land Use and-Resource Development	2 Units
Est. Man 835	- Mineral Valuations	2 Units
Est. Man 836	- Real Estate Development-Finance and Securitization	2 Units
Total		= <u>8 Units</u>

**Second Year 1st Semester Courses
(i.e. Third Semester)**

Est. Man 837 Master's Thesis/Dissertation 12 Units

GRAND TOTAL = 50 Units
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Any two elective may be selected from the following:

Est. Man 717/727	(-	Advanced Agricultural Valuations	2 Units
	(	-	Valuation of Cultural Artifacts and	
	(		Sacred Objects and grounds	2 Units
	(	-	Environmental Impacts Appraisals	2 Units
	(	-	Issues in Land Economy	2 Units
	(	-	Insurance Valuations	2 Units
	(	-	Administration of Public Properties	2 Units
	(	-	Principles and application of G.I.S	2 units

4.6.6 COURSE SYNOPSES FOR M.Sc/M.Tech (Core Courses)

Est. Man 810 - Research Methodology:

Types of Research. Research methodology and perspectives. The Basic research problem identification and choice of topic. Research design. Data collection analyses and presentation. The use of statistical tools and techniques. The use of computer and internet resources. Thesis/Dissertation.

Est. Man 811 - Advanced Valuation:

Advanced framework for modern valuation. Valuation mathematics, Statistical and other quantitative techniques such as multiple regression analysis, expertise system etc. Property market analysis including market on or under sea bed. The use of computer in property valuation. Explicit incorporation of risk in valuation. Rational and real value models. Environmental impacts valuations. Compulsory acquisition and compensations. Compensation for environmental pollutions. Statutory valuations. Valuation cases. Farm, crops and tree valuations. Role of the valuer as expert witness.

Est. Man 812 - Advanced Feasibility and Viability Appraisals:

Concepts, scientific and other dimensions of traditional and modern decision appraisals, feasibility and viability indicators and tests. Statistical and other forecasting techniques. Risk analysis. Sensitivity tests. Follows-up appraisals. Critical path analysis.

Est. Man 813 - Advanced Property Management:

Property management relating to social, political, economic, physical, spiritual and legal aspects. Motives, policies and objectives of estate owners, and the choice of alternative strategies by the estate manager to achieve them.

Management of private residential, commercial, industrial, agricultural recreational and sacred properties. Professional standards relating to management of landed property. Leasing and tenancy agreement. Structural surveying practices. The management of public properties. Measurement of property performance.. Legislation affecting property and property rights. Landlord and tenants and dilapidations. Dangerous properties, tort, and nuisance. Housing policies and law. Property life cycles and development and redevelopment strategies. The use of statistical tools and techniques. The application of computer in property management.

Est. Man 814 - Quantitative Techniques in Estate Management:

Methods of data collection analyses and presentation. Frequency distribution tables and graphs. Measures of central tendencies and dispersions. Normal curve and probability distribution. Regression and correlation analyses. Linear programming and simulation analyses. Application to valuations and various aspects of Estate Management.

Est. Man 815 Property Investment Appraisal:

Investment aims and investment options. Characteristics of property investment. Analytical investment techniques – Comparative techniques used for property and other investment fields. Fundamental share analysis and technical analysis of equity, gilts and indexed stocks and other securities. Critical analysis of property investment valuations. Critical appraisal of property investment analysis techniques.

Est. Man 821 Facilities Management:

Development and scope of facilities management. The competence areas and techniques for managing and delivering of facilities services in the core competence areas (Finance, Real Estate, Planning and Project Management, Operations and Maintenance, Human and Environmental Factors, quality assessment and innovation, communication). The use of facility management information system is taught with emphasis on computer aided facility management (CAFM). Computer integrated facility management (CIFM) and relevant technologies

Est. Man 822 - Plant and Machinery Valuation:

Conceptual definitions and identification of plant and machinery. Survey and determination of functional and economic lives and efficiency of plant and machinery. Various purposes for which plant and machinery valuation may be required. Approaches and methods of valuation of plant and machinery. Statutory enactments and case law decisions affecting plant and machinery valuations. Special problems attending plant and machinery valuation in Nigeria and their solutions.

Est. Man 823 - Advanced Property Rating and Land Taxation:

Rating as a major source of local government finance. Taxation as a major source of State and National government finance. Taxation of income, capital, capital transfer and estate duty etc. Legal frameworks for imposition, valuation, collection and appeals. Rating and taxation as Policy Instrument in Society.

Valuation techniques. The use of Computer and quantitative techniques. Comparison with position in select countries. Land taxation reforms.

Est. Man 824 - Applied Town and Country Planning:

Application of general principles to the development and redevelopment of urban and rural communities. The role of transportation and information in town, country and regional development. Transportation planning as a means of integration and equilibrium of town, country and regional inequalities. Transport and spatial structure of the economy. Urban development models and transport theories of the location of economic activities. The economics of building development. Transportation and economic development. Housing policies and legislation in Nigeria. Respective town and their respective space and sitting requirements. Valuation of economic and socio-political implications of town and country development and redevelopment. The role of public and private developers. Valuation of environmental pollutions. Planning balance sheets and goal achievement matrix. Valuation treatment of complex compensation - betterment issues. A critical evaluation of the statutory basis of town and country planning in Nigeria and comparison with experience of select countries of the world. Application of quantitative techniques and computer. Field project whereby real urban, rural and regional planning problems are studied under guidance and practical solutions proposed by the students.

Est. Man 825 - Land Policy

Objectives and manifestations of land policies. Urban and rural land policies and their manifestations. The nature of customary tenure in economic and social structure of selected countries in West Africa.

National and regional parks. Forestry and economic development. Recreation problems of ecology. Application of policies to real estate and land legislations. Comparative study of land policies of selected developed and developing economies. Impact of land policy on development. Comparative land reforms.

Est. Man 826 – Project Management

Case studies of strategies and techniques for organizing and managing development project and the project team. This involves the use of Critical path analysis. Programme. Evaluation and review techniques and other operational research techniques. Other topics include methods of organization and control, incentive strategies, risk management and entrepreneurship.

COURSE SYNOPSES FOR M.Sc./(M. Tech ELECTIVE COURSES

Est. Man - Advanced Agricultural Valuations

The bases and various techniques for valuation of farms, crops, trees, plant and machinery and other components of agricultural property for various purposes. Critical evaluation of legislations respecting agricultural property valuation.

Est. Man - Valuation of Cultural Artifacts and Sacred Objects and Lands

Documentation and broad locational distributions of cultural artifacts, and sacred places, objects and lands in Nigeria. Comparison with what is obtaining in select

countries of the world. Buy-back negotiations and valuations for recovery of national cultural artifacts and sacred objects lost to other countries of the world. Legal bases for protection and valuations. Traditional and modern techniques employed in their valuations.

Est. Man - Environmental Impacts Appraisals:

Valuation treatment of environmental impact assessment of various developmental and resource exploitation activities including oil exploration and mining, manufacturing and other pollution generating activities. A critical evaluation of legal enactments on the above.

Est. Man - Issues in Land Economy

Proprietary land resources Motives and complementarities. Reciprocity of relationships. Predisposing functions of antecedents. The law of proprietary magnitudes and universal provisions. Changing urban settlement pattern and spatial distribution of industry, residential, commercial, recreational, cultural and sacred. land uses. Regional and rural development. Land ownership, Motives and decisional making. Social and other objectives in the process of land development.

Est. Man - Insurance Valuations

The survey. Components of the assessment. The bases and techniques of assessment A critical appraisal of the legal bases for the above.

Est. Man -Administration of Public Properties

Objectives and various alternative techniques for achieving them.

The use of quantitative techniques and computer in administration of public properties. A critical evaluation of privatization and its achievements.

4.7 DOCTOR OF PHILOSOPHY (Ph.D) IN ESTATE MANAGEMENT

4.7.1 PHILOSOPHY

The NUC Guidelines governing Postgraduate Studies in Nigerian Universities effectively hit the nail squarely on the head when it asserted, inter alia, that the main objectives of the Postgraduate Study in the Nigerian University System “is the further development of the spirit of inquiry in the graduate students through training in research in an atmosphere of intellectual independence and individual creativity...” This is particularly so in the field of Estate Management where all aspects of teaching, research and practice are filled with innumerable gaps, and ever changing dynamic situations calling for solutions from first principles. A Ph.D in Estate Management or its equivalent is therefore the highest in the well synchroneshed research levels, and demands clear and unequivocal abilities from candidates for independent creative research with minimum supervision.

4.7.2 AIMS AND OBJECTIVES

i The aims and objectives at this level is to produce top-most academics and researchers for universities, governments, corporations, and organizations, as well as leaders in private practice.

- ii Top level policy formulators on various aspects of estate management should be drawn from holders of this qualification.
- iii Pushers of frontiers of knowledge in the very wide and deep profession of Estate Management who would among other achievements, publish authoritative articles and books would be drawn from holders of this qualification.
- iv The need for this qualification in a country like Nigeria bursting with natural resources in the midst of poverty cannot be overemphasized. This is more so in an increasingly globalized world where a country can either make a prudent use of her land and innumerable minerals and other resources, or loose them to other nations who are less endowed with land, minerals and other resources, in a globalized world

4.7.3 ADMISSIONS REQUIREMENTS

Candidates for admission to Ph.D Programmes should pursue it through:

- i. Direct admission to Ph.D programme; or
- ii. Through M.Sc (M.Tech)/Ph.D programme.

i. **Direct admission to Ph.D programme**

A candidate must have academic M.Sc/M.Tech Degree or equivalent in Estate Management with a minimum of 3.50 grade point average on a 5.0 point scale or 3.00 on the old 4 point scale.

ii. **Through M.Sc (M.Tech)/ Ph.D programme.**

A candidate with first class Honours Bachelor's Degree in Estate Management from a recognized university may be admitted into a M.Sc (M.Tech)/Ph.D programme. The candidate so admitted has two options. Namely:

- (a) First (and preferably), he/she could complete the M.SC/M.Tech degree and pass it with a minimum of 3.50 GPA on 5.0 scale or 3.00 on the old 4 point scale.
- (b) The candidates general performance could be evaluated after the first two semesters of being on the M.Sc/M.Tech/Ph.D programme and if he/she makes a GPA of 3.50 or above in the coursework and shows sufficient ability for research work at Ph.D level, Senate, on the recommendations of the Departmental and Faculty Postgraduate Studies Committees and the Board of the School of postgraduate Studies, Senate may approve that the candidate proceeds to the Ph.D programme without fully completing the Master's programme. Candidate on this option must pass a minimum of 52 credit units broken down as follows:

Credit earned on two (2) semesters of Masters Course works			30units
ESM 910	Advance Real Estate Portfolio Management	-	2 units
ESM 911	Advance Land use and Resource Development	-	2 units
ESM 912	Mineral Valuations	-	2 units
ESM 913	Advance Feasibility and Viability Appraisals	-	2 units
ESM 914	Research Seminars	-	2 units
	Ph.D Thesis	-	<u>12units</u>
			<u>22units</u>

Direct Admission to Ph.D: Candidates who secured direct admissions to Ph.D programme after successful M.Sc/M.Tech programme and candidates on first option of M.Sc(M.Tech)/Ph.D must pass in a minimum of 22 units broken down as follows:

ESM 910:	Advanced Real Estate Portfolio Management	-	2 units
ESM 911:	Advanced Land and Resource Development	-	2 units
ESM 912:	Mineral Valuations	-	2 units
ESM 913:	Advanced Feasibility/Viability Appraisals	-	2 units
ESM 914:	Research Seminars	-	2 units
	Ph.D Thesis	-	12 unit

4.7.4 AREAS OF SPECILIZATION

Carrying out research for a Ph.D in Estate Management is very different from being an undergraduate. The candidate will work under (2) two supervisors, main and co-supervisor, on a unique project in a field of the candidates' choice selected from the following areas of specialization:

- Valuation
- Feasibility, and Viability Appraisals
- Land Policies.
- Plant and Machinery Valuation.
- Mineral Valuations.
- Rural land Use and Valuation.
- Valuation of Cultural Artifacts and Sacred objects and lands.
- Real Estate Development Finance and Securitization
- Real Estate Management.
- Urban Land Economics
- Facilities Management
- Land Administration and Management.
- Agricultural Valuations
- Town and Country Planning
- Property Rating and land Taxation.
- Portfolio Management
- Project Management
- Environmental Impact Assessment

- a) **Doctor of Philosophy (Ph.D) Programmes**
Programmes should be as specified in the individual Universitys' prospectus.
- b) **Duration of Programme**
 - i. A full time Ph.D programme shall run for a minimum of 6 semesters.
 - ii. Part-time Ph.D programmes shall run for a minimum of 8 semesters.
- c) **Requirements for Graduation**
Ph.D. programmes should primarily be by research. In addition, Departmental Postgraduate Committee will prescribe some courses of not more than 12 credit units to be taken by the candidates. A Ph.D thesis of 12 credit units must be defended before a panel of Internal and External Examiners.
- d) **Domain of the Doctoral Programme**
The Doctoral programmes shall be domiciled in the relevant Department.
- e) **Student Enrolment**
Student Enrolments shall be subject to the carrying capacity of the Department and more importantly the availability of qualified Supervisors namely;
 - (i) Professors (They are academic leaders).
 - (ii) Holders of Ph.D Degree (who show evidence of continued productive scholarship since acquisition of Ph.D.)

4.7.5 ACADEMIC STANDARDS

- a) **Academic Regulations**
 - i) **Academic Session**
An academic session consists of two semesters. Each semester normally comprises 15 weeks of teaching and two weeks for examinations.
 - ii) Ph.D Programmes shall be run on the basis of the Course Unit System. Under the course unit system, all courses should be sub-divided into more or less self-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) Credit are units weights attached to a course. One credit unit is equivalent to:
 - * one hour per week per semester of 15 weeks of lectures.
 - * two hours per week per semester of 15 weeks tutorial
 - * three to five hours per week of 15 weeks lectures or tutorial or three hours per week of term paper work or seminar per semester of 15 weeks.

b) **Programme Requirements**

i) **Registration Procedure**

Students shall normally complete registration for courses for the semester not later than two weeks after the start of the semester. A student cannot withdraw from a course after seven weeks of lectures in a given semester without permission from the Head of Department.

A student who fails to sit for examination in more than two courses for which he/she registered is deemed to have failed the course.

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

ii) **Credit Transfer**

A Ph.D. student who obtained his Masters degree from the same University or other recognized Universities may be allowed up to 24 credit transfer from the master's programme provided the courses were passed with a B minimum grade.

iii) **Good Standing**

To be in good standing, a student must in each semester have a Cumulative Grade Point Average (CGPA) of not less than 2.40.

iv) **Probation**

A student whose CGPA is below 2.40 or whose overall average score is less than 50% at the end of a particular semester shall be placed on probation for one academic session. Such a student shall be allowed to register for courses at the next higher level. Provided the total number of courses that he/she shall not exceed 15 credit units per session in addition to the following:

- The Registration in respect of the student work load is completed with; and
- The pre-requisite courses, if any, for the higher level courses have been passed.

A student who has been on probation once and whose CGPA is till less than 2.40 in the session immediately following the one on which he was already on probation shall be required to withdraw from the programme.

v) **Transfer from other universities**

Students who transferred from other Universities shall be credited with only those courses deemed relevant to the programmes, which they have already passed prior to their transfer. Such a student shall however be required to pass the minimum number of units specified for graduation for the number of sessions he/she has spent in the faculty provided that no student shall spend less than four semester in order to earn a master's degree. Students who transfer for any approved reason shall be credited

with those units passed that are within the curriculum. Appropriate decisions on transfer cases shall be subjected to the approval of Senate on the recommendation of the Faculty and School of Postgraduate Studies

vi) **Withdrawal**

A student whose Cumulative Grade Point Average is below 2.40 at the end of two consecutive semesters shall withdraw from the programme.

c) **Attendance**

In order to be eligible for examination in a particular course, a student shall have attended a minimum of 75% of the total periods of formal instructions delivered for the course.

d) **Course Evaluation**

In the Ph.D Programmes, assessment of students' achievements should be based on:

- i) Course Examination
- ii) Term papers/Research Seminars;
- iii) Other assignments.
- iv) Group project work/field works and
- v) Research seminars

e) **Examinations, Grading Procedure & Results**

i) **Examinations**

In addition to continuous assessment, final examination shall be given for every course at the end of every semester.

The total scores obtainable for every course shall be 100% as follows:

Continuous Assessment	30%
Final Examination	70%
Total	100%

Each course shall normally be completed and examined at the end of the semester in which it is offered.

ii) **Pass Mark**

The minimum pass mark in any course and thesis shall be 50% and 60% respectively.

iii) **Grading System**

Grading of courses shall be done by a combination of percentage marks and letter grades translated into a graduated system of Grade Point Equivalents (GPE). For the purpose of determining a student's standing at the end of every semester, the Grade Point Average (GPA) system shall be used. The GPA is computed by dividing the total number of credit points (TCP) by the total number of units (TNU) for all the courses taken in the

semester. The credit point for a course computed by multiplying the number of units for the course by the Grade Point Equivalent of the marks scored in the course. Each course shall be graded out of a minimum of 100 marks and assigned appropriate Grade Point Equivalent as in the following table:

Credit Units	Scores	Letter Grades	Grade Points (GP)
Vary according to contact hours assigned to each course per week per semester, and according to load carried by students	70 – 100	A	5
	60 – 69	B	4
	50 – 59	C	3
	0 - 49	F	0

iv) Presentation of Results

Results from the Postgraduate School Board of Examiners shall be presented to Senate for approval.

v) Release of Results

Results shall be released/published not later than 2 weeks after approval by the Senate.

Note: Items b-e as listed above should be adopted as contained in the individual Universities' regulations for all Doctoral (Ph.D) programmes.

e) External Examiner System

The external examiner system shall be used at the end of the Doctoral programme to assess the thesis.

The candidate shall be required to defend the thesis orally (vivaVoce) before a panel of Internal and External Examiners.

4.7.6 RESOURCE REQUIREMENT FOR TEACHING AND LEARNING IN THE PROGRAMME

a) Academic Staff

i) Teacher/Student Ratio

The staff to student ratio for the Ph.D programme shall be is 1:10 for effective teaching and learning.

ii) Academic Staff Work-Load

An academic staff shall carry a work load not exceeding the maximum prescribed by NUC.

- iii) **Staffing**
There should be a minimum of 8 full time on ground in a Department.
- iv) **Supervision & Teaching**
The followings shall be eligible for teaching and supervision at Ph.D level:
 - i) Professors. (Professors are acknowledged academic leaders in their field. This is the practice in Universities all over the world)
 - ii) Holders of Ph.D degrees who show evidence of continued productive research through, for example, scholarly publication since they acquired their Ph.D. (This is the practice in well established Universities all over the world).
- b) **Non-Academic Staff**
The services of support staff, which are indispensable in the proper running of the programme as well as for administration, are required. It is important to recruit very competent senior technical staff to maintain teaching and research equipments. Universities should pay attention to optimum proportioning of the non-academic staff to avoid redundancy and overstaffing.
- c) **Computer Literacy**
With the computer age and application of information technology, both academic and non-academic staff should be sufficiently computer literate.

4.8 GENERAL FOR ALL PGD, MASTER AND Ph.D PROGRAMMES

4.8.1 ACADEMIC PHYSICAL SPACE AND EQUIPMENT REQUIREMENTS

Physical Facilities

- i) Laboratories, preparation rooms, stores, workshop, dark rooms, studios and other specialized spaces should be provided.
- ii) Computer Room, including Virtual Library facilities.
- iii) Resource Rooms to enhance academic development.

Office accommodation

The standard space requirement as shown below shall apply.

Position/Rank	m²
Professor's Office	18.50
Head of Department's Office	18.50
Tutorial Teaching Staff Office	13.50
Other Teaching Staff Space	7.00
Technical Staff Space	7.00
Secretarial Space	7.00
Seminar Space/per student	1.85

Classroom Space and examination Theatres

- * Adequate classrooms should be provided with enough chairs and tables.
- * Examination halls and theatres should be provided to minimize the rate of examination malpractices.

Equipment

For effective learning the following equipment should be provided:

- * Scientific equipments for specific areas of specialization, the concept of central laboratories and shared facilities through linkages and collaboration should be encouraged.
- * Computers
- * Photocopying Machines
- * Video Cameras
- * Tape recorders
- * Internet and E-Mail facilities
- * Audio Visuals.

4.8.2 LIBRARY FACILITIES

There should be adequate physical and virtual library facilities. These include current journals, handbooks, textbooks, manuals and other reference materials in sufficient numbers.

4.8.3 LEARNING OUTCOMES FOR PGD, MASTERS AND DOCTORAL PROGRAMME

Comprehensive knowledge of areas of specialization

- i) Graduates should have comprehensive knowledge of their areas of specialization, encompassing an understanding of the theoretical foundations and quantitative tools of the areas of specialization, as well as the ability to apply this knowledge to actual problems.
- ii) Graduates should be able to demonstrate problem solving capacity using multidisciplinary approaches in an innovative and creative way.
- iii) A candidate should display a comprehensive knowledge of area of specialization and should have acquired entrepreneurial skills to equip them for self sufficiency and also meet the needs of public and private sectors in Nigeria and beyond.

Problem Solving Capacity

Graduates should be able to demonstrate problem solving capacity through literal, critical, innovative and creative connections among diverse fields of study in analyzing problems using multidisciplinary approaches.

4.8.4 COURSE STRUCTURES

Course Structures (i.e. the course codes and course content/descriptions/synopsis should be as contained in the individual University's programme/brochures/prospectus for the various postgraduate programme i.e. PGD, Masters (professional), M.Sc/M.Tech & Ph.D programmes.

However, for the Uniformity of course codes for transcript purposes, the following is recommended:

PGD	600 Level
Masters (professional)	700 Level
M.Sc/M.Tech	800 Level
Ph.D	900 Level

4.9 ACADEMIC STANDARDS

4.9.1 ACADEMIC REGULATIONS

(i) **Academic Session**

An academic session consists of two semesters. Each semester normally comprises 15 weeks of teaching and two weeks of examinations.

(ii) **Definition of Credit or Unit**

Credits are weights attached to a course. One credit is equivalent to one hour per week per semester of 15 weeks of lectures or tutorial or three hours per week of term paper work or seminar per semester of 15 weeks.

4.9.2 PROGRAMME REQUIREMENTS

(a) **Registration Procedure**

Students shall normally complete registration for courses for the semester not later than two weeks after the start of the semester. A student cannot withdraw from a course after a third of it has been given without permission from the Head of Department. A student who withdraws after this time or who fails to sit for final examination without reason acceptable to the Senate shall be deemed to have failed that course.

Student Academic Status

A student's academic status shall be determined on the basis of his/her performance at the end of the semester examination. The following categorization shall be used.

(b) **Good Standing**

To be in good standing, a student must in each semester have a Cumulative Grade Point Average (CGPA) of not less than 2.40.

(c) **Probation**

A student whose CGPA is below 2.40 or whose overall average score is less than 50% at the end of a particular semester shall be placed on probation for one academic session. Such a student shall be allowed to register for courses at the next higher level, provided the total number of courses that he/she has registered for shall not exceed 15 credit units per session in addition to the following:

- The registration in respect of the student work load is completed: and
- The pre-requisite courses if any for the higher level courses have been passed.

A student who has been on probation once and whose CGPA is still less than 2.40 in the session immediately following the one on which he was already on probation shall be required to withdraw from the programme.

(d) **Transfer**

Students who transferred from other Universities shall be credited with only those courses deemed relevant to the programmes, which they have already passed prior to their transfer. Such students shall however be required to pass the minimum number of units specified for graduation for the number of sessions they have spent in the faculty provided that no student shall spend less than four semester in order to earn a masters degree. Students who transfer for any approved reason shall be credited with those units passed that are within the curriculum. Appropriate decision on transfer cases shall be subjected to the approval of Senate on the recommendation of the Faculty and School of Postgraduate Studies.

(e) **Withdrawal**

A student who's CGPA fails below 2.40 at the end of a particular year of probation shall be required to withdraw from the University.

(f) **Attendance:**

In order to be eligible to take examination in a particular taught course, a student shall be expected to have accumulated a minimum of 75% attendance of the total period of formal instruction delivered for the course.

4.9.3 COURSE EVALUATION

i. **Attainment Levels:**

In the Post-graduate Estate Management Programmes assessment of students' achievements shall be based on:

Examinations

Oral presentation and problem solving exercises

Assignments

Group project works/field works and

Research Seminar for Ph.D candidates.

ii **Continuous Assessment:**

Continuous assessment shall be done through essays, test' term papers tutorial exercises, quizzes, home-work and field works.

- (a) Scores from continuous assessment shall constitute 30% of the final marks for courses which are primarily theoretical.
- (b) For courses which are partly term paper presentations and partly theoretical, scores from continuous assessment shall constitute 40% of the final marks.
- (c) For courses that are entirely term paper presentation, continuous assessment shall be based on a student's term paper or reports and shall constitute 100% of the final marks.

4.10 ENTREPRENEURIAL STUDIES

Entrepreneurial Studies shall be an integral part of Post-Graduate Estate Management Programmes embedded in appropriate courses with the aim of empowering the graduates with skills that will enable them engage in income-yielding ventures, or professional practices thus preparing them to be responsible, enterprising individuals who will become entrepreneurs or entrepreneurial thinkers and or engaged in professional practices by establishing firms as Estate Surveyors and Valuers and contribute to national economic development and sustainable communities.

4.11 EXTERNAL EXAMINATION SYSTEM

The external examination system shall be used in the final year of the Postgraduate programmes to assess final year courses and projects report/dissertation/thesis and to certify the overall performance of the graduating students as well as the quality of facilities and teaching.

4.12 EXAMINATIONS, GRADING. PROCEDURE AND RESULTS

(i) Examination

- (a) In addition to continuous assessment, final examinations shall be given for every course

The total scores obtainable for any course (continuous assessment and final examinations) is 100%. The total final examination scores would vary from one course to another depending on the scores of the continuous assessment of a course as explained in section

Continuous Assessment	30	40	100
Final Examination	70	60	0
Total	100	100	100

- b. Each course shall normally be completed and examined at the end of the semester in which it is offered.
- c. A written examination shall normally last a minimum of one hour for one unit course, and a course of 3 credit units shall have 3 hours of examination.

(ii) Pass Mark

The minimum pass mark in any course shall be 50%

(iii) Grading System

Grading of courses shall be done by a combination of percentage marks and letter grades translated into a graduated system of Grade Point Equivalents (GPE). For

the purpose of determining a student's standing at the end of every semester, the Grade Point Average (GPA) system shall be used. The GPA is computed by dividing the total number of credit points (TCP) by the total number of units (TNU) for 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 Grade Point Equivalent of the marks scored in the course. Each course shall be graded out of a minimum of 100 marks and assigned appropriate Grade Point Equivalent as in the following table.

(i) Credit Units	(ii) % Scores	(iii) Letter Grades	(iv) Grade Point (GP)	(v) Average (GPA)	(vi) (CGPA)	(vii) Class of Degree
Vary according to contact hours assigned to each course per week, per semester, and according to load carried by students	70 – 100	A	5	Derived by multiplying i and iv and dividing by Total Credit Units	4.50 – 5.00	Distinction
	50 - 69	B	4		2.40 – 4.49	Pass
	Below 50	F	0		Below 2.40	Fail

(iv) **Presentation of Results**

Results from the Postgraduate Schools' Board of Examiners shall be presented to Senate for approval.

(v) **Release of Result**

Results shall be released/published not later than 2 weeks after approval by the Senate.

4.13 DEGREE CLASSIFICATION

The determination of the degree shall be based on the Cumulative Grade Point Average (CGPA) earned at the end of the programme. The GPA is computed by the total number of credit points.

(TCP) by the total number of units (TNU) for all the courses taken in the semester. The CGPA shall be used in the determination of the class of degree according to the following breakdown.

CUMMULATIVE GRADE**CLASS OF DEGREE****POINT AVERAGE (CGPA)**

4.50 -	5.00	Distinction
2.40 -	4.49	Pass
Below -	2.40	Fail

4.14 RESOURCE REQUIREMENTS FOR TEACHING AND LEARNING IN THE PROGRAMMES**4.14.1 Teacher to Student Ratio**

For effective teaching and learning the Estate Management Postgraduate Programme shall have a teacher to student ratio of 1 to 15.

4.14.2 Academic Staff Work- Load

With a minimum load of 18 credits for students and a minimum of six full-time equivalents to staff in each programme, staff should have a maximum of 15 contact hours per week for lectures, tutorials, term papers and supervision of projects.

4.14.3 Staffing

The NUC guidelines on staff/student ratio for Estate Management shall apply. However, there should be a minimum of four full-time equivalents of staff on the ground in a department. At least, 60% of teaching staff should have doctoral degrees or equivalent as well as appropriate professional qualifications.

4.14.4 Staff Mix

The staff mix recommended for effective curriculum delivery in Estate Management is 20:30:50, Professor/Reader: Senior Lecturer; others.

4.14.5 NON-ACADEMIC STAFF

The services of support staff, which are indispensable in the proper running of the programme as well as for administration, are required. It is important to recruit very competent senior technical staff to maintain teaching and research equipment. Universities should pay attention to optimum proportioning of the non-academic staff to avoid redundancy and overstaffing.

- The ratio of non-academic staff to academic staff should be 1: 4
- Among the non-academic staff, the ratio of senior staff to junior staff should be 3:2.

4.14.6 COMPUTER LITERACY

With the computer age and application of information technology, both academic and non-academic staff should normally be computer literate.

4.15 ACADEMIC PHYSICAL SPACE & EQUIPEMENT REQUIREMENTS

4.15.1 Professional Physical Facilities Requirements

- (a) Computer Room, including Virtual Library Facilities
- (b) Board Room to enhance professional development, similar to moot court in the Law Faculties.

4.15.2 Office Accommodation

Position/Rank	
Professor's Office	24m ²
Head of Department' Office	24m ²
Senior Lecturer	16m ²
Lecturer	12m ²
Asst. Lecturer	8m ²
Senior. Tech Staff	12m ²
Junior Tech. Staff	5m ²
Studio Space	4m ² per student
Lecture's Space	0.5m ² per Student
Seminar Space	0.5m ²

4.15.3 Classroom Space and Examination Theatres

- Adequate classrooms should be provided with enough chairs and tables
- Examination halls and theatres should be provided to minimize the rate of examination malpractices.

4.15.4 Equipment

- For effective learning, the following equipment should be provided:
 - Computer
 - Photocopying Machines
 - Tape Recorders
 - Projectors.
 - Internet and e-mail facilities

4.16 FACILITIES

There must be adequate library facilities to cater for the interest of all the courses in the programmes. These include current journals, handbooks, textbooks, manuals, codes of practice, standards and specifications, etc. in sufficient numbers.

4.17 LEARNING OUTCOMES FOR ESTATE MANAGEMENT

Comprehensive Knowledge of Areas of Specialization

Graduates should have a comprehensive knowledge of their chosen areas of specialization, embodying an understanding of the theoretical foundations and quantitative tools of the areas of specialization, as well as the ability to apply this knowledge to actual problems.

Problem Solving Capabilities

Graduates should be able to demonstrate problem solving capacity through lateral, critical, innovative and creative connections among diverse fields of study in analyzing problems.

Global Perspective

Graduates should have a global perspective, based on an understanding of both the domestic and global environments of the organization and/or practice.

Communication Competency

Graduates should be able to communicate effectively in writing and orally in ways appropriate for a variety of objectives and audiences. This is more so in the field of Estate Management where one may be expected to serve as expert witness in adjudicative procedures.

Social Responsibility

Graduates should understand and demonstrate the ethical considerations and environmental ramifications of their decisions. Fortunately, in the field of Estate Management, these issues are very well catered for by Professionals ethical codes of conduct well spent out, fully detailed and rigorously enforced by the Estate Surveyors and Valuers Registration Board of Nigerian and Overseas Professional counterparts.

4.18 INSTRUMENTS OF ACCREDITATION

4.18.1 INTRODUCTION

The term quality simply means fitness for purpose. It means that a product or service fits the purpose according to predetermined standards. Quality as fitness for purpose envisions quality in terms of fulfilling a programme's requirements, needs or desires and is usually based on the ability of an institution to fulfill its mission or a programme of study to fulfill its aims.

Quality is being used to designate the level of acceptable standard in almost every industry such that quality assurance has become a metaphor for the management of the maintenance of quality of goods and services at a good standard. Historically, quality was maintained through control mechanisms. However, in recent years, the practice of quality control has progressively moved from an ex post activity to a more proactive process, known as quality assurance. The industry developed the concept of Total Quality Management (TQM) to capture three key components of quality, namely, quality control, quality assurance and continuous monitoring and evaluation. TQM is not industry-

specific; rather it is a phenomenon or practice that has universal applicability wherever services are rendered or products produced.

In the Nigerian University System, one of the functions of the National Universities Commission, as the regulatory agency of the university system is the assurance of the qualities of academic programmes (Undergraduate and Postgraduate) offered in the entire University system. As with industry, quality assurance can be both internal and external. The external mechanism is constituted by accreditation conducted by the NUC. The NUC regulates programmes by ensuring that the universities established only programmes for which they have the requisite curriculum as well as human and material resources. The structure of the internal institutional mechanism is comprised of the Academic Department, the Faculties, Schools or Colleges and the Senate. The external examiner system provides additional assurance that the quality of academic programmes of the university is acceptable to academic peers across the University System.

Accreditation of academic programmes entails peer assessment of the programme against pre-determined standards. The standards are often referred to as Minimum Academic Standards and provide the benchmark against which the quality of the programme is measured.

The Postgraduate Estate Management PGD/M.Sc (M.Tech) /Ph.D Programmes are among the Postgraduate Programmes offered in most Universities in Nigeria. The programmes aim at producing quality professional Estate Surveyors & Valuers and academics for both the public and private sectors of the economy. In order to achieve the aims of establishing these programmes and to assess the characteristics of the programmes, the accreditation criteria and weight stated below should be used in the assessment of the Postgraduate Estate Management programmes.

4.18.2 CRITERIA FOR ASSESSMENT (Total : 100 Points)

(A) ACADEMIC CONTENT (22)

- i) Clarity of Mission, Philosophy, Aims and Objectives of Programme (4)**
The mission, philosophy, aims and objectives of the programme must be explicitly expressed and clearly defined.
- ii) Admission Requirements (3)**
The degree to which students admitted into the programme meet prescribed Minimum Admission Requirements should be assessed.
- iii) Academic Regulations (3)**
The rules and regulations guiding the conduct of the PGD, Masters (professional), M.Sc/M.Tech and Ph.D Programmes should be explicitly stated in postgraduate prospectus. The students' level of awareness of the programme's rules and regulations should be gauged as well.

- iv) **The Curriculum (12)**
The curriculum of the PGD/M.Sc(M.Tech/Ph.D/ Postgraduate Estate Management programme should state very clearly cognitive affective and psychomotor skills to be acquired by the students. The curriculum should have adequate mechanisms to prepare students properly to adapt to the practical world of Estate Management. The adequacy of the curriculum content to produce Estate Managers/Estate Surveyors and Valuers of the targeted Postgraduate level should be assessed.

(B) **ASSESSMENT (10)**

- i) **Course Work (3)**
Assessment should be made on the efficacy of the course work mode of assessment.
- ii) **Student Project Report /Dissertation/Thesis (3)**
The standard of essays, examinations, tests and projects should be evaluated to ascertain the quality of the programme.
- iii) **External Examination System (4)**
The efficiency of the external examination system should be ascertained. The quality of the external examiners used should be assessed through the external examiner's Report.

(C) **STAFFING (30):**

- a) **Academic Staff (28)**
The quality and credibility of the academic staff should be examined, using the following indices.
- i) **Staff: Student Ratio (1:10) (11)**
- ii) **Staff Mix of 20:30:50 (5)**
- iii) **Academic Staff with Doctorate (7)**
Percentage of faculty with a doctoral degree. A minimum of 60% of the teaching staff should have doctorate degree or equivalent in relevant disciplines.
- vi) **Staff Development (5)**
There should be proven evidence of a well established staff development programme. The accreditation panel should determine the percentage of staff that have benefited from the scheme.
- b) **Non-Teaching Staff (2)**
The quality of the non-teaching staff available for the programme should be assessed.

(D) **COURSE DELIVERY AND FACILITIES (24)**

i) **Course Delivery (11)**

The modes of course delivery such as lectures, seminars, group projects and field work, as relevant, in-company training, etc, have been adequately used in training the Postgraduate Estate Management students. The Panel should assess this and measure the effectiveness and adequacy of the various course delivery modes.

ii) **Facilities (5)**

Assessment should be made on the degree of availability of facilities such as classrooms, seminar rooms, lecturers' office accommodation, ICT tools and equipment.

iii) **Library (5)**

The quality, relevance, currency and quantity of books and international academic and scholarly journals available for the programme should be assessed to determine their adequacy or otherwise.

iv) **Funding (3)**

The adequacy of funds available for the programme should be assessed. How far is the postgraduate school able to assist indigent student financially?

(E) **EMPLOYERS/ALUMNI RATING (14):**

i) **PGD/M.Sc/Ph.D Alumni Activity (3)**

Availability of feedback from Alumni, employers and sponsors should be obtained and used to assess the level to which the programme has produced the required quality of Estate Managers (Estate Surveyors and Valuers). Employability of graduates; ability to secure employment for their graduates.

ii) **Placement Success (2)**

The percentage of preceding year graduate that gained employment with or without the help of career advice or the number that have successfully established their own private practice.

iii) **Employer Recommendation (2)**

Employers of PGD/M.Sc/M.Tech/Ph.D graduates would be asked to recommend three Departments of Estate Management in Nigeria from which they would recruit Postgraduate PGD/M.Sc/M.Tech/Ph.D graduates. The number of votes received by each Department will be aggregated and reported.

iv) **Career Progress (2)**

The degree to which alumni have moved up the career ladder three years after graduating. Progression is measured through changes in level of

seniority and the size of the company or organization in which they are employed. For those who have set up private practices, how well they are doing will be determined through sampling of clients' opinion by the Department.

- v) **International Students (1)**
The percentage of international students in the programme.
- vi) **Foreign Languages (1)**
Number of staff with foreign language experience and/or number of foreign languages required to complete the PGD/M.Sc/ (M.Tech)/Ph.D.
- vii) **Gender Sensitivity of Programme. (3)**
 - a) 10% of female staff on the programme (1)
 - b) 20% of female students on the programme (2)

4.19 ACCREDITATION RESULTS:

The results of the accreditation shall be given by the aggregate weights accumulated as follows:

70 - 100%	Full Accreditation	6 years admission
50 - 69%	Interim Accreditation	4 years admission
0 - 49%	Failed Accreditation	No further admission until the situation is remedied

5. FINE AND APPLIED ARTS

5.0 POSTGRADUATE PROGRAMMES IN FINE AND APPLIED ARTS

5.1 INTRODUCTION

The National Universities Commission (NUC) as a regulatory agency for University Education in Nigeria has one of its mandates, the definition and maintenance of academic standards. The Commission, has in the past, organized the definition of Minimum Academic Standards and subsequently accreditation for all approved undergraduate programmes offered in Nigerian Universities. As a follow up to the success recorded in the undergraduate programme, the commission has embarked on defining benchmarks and minimum academic standards for postgraduate programmes in Nigeria. This exercise for us in Fine Arts, Applied Arts, Industrial Arts, Arts and Design is long overdue due to the unhealthy multiple standards in our postgraduate course offering across the nation. It is equally time to define what constitutes academic pursuit or purely a professional one in view of the diverse work environments in which holders of these degree certificates will find themselves. This order must begin with how we prepare leaders in the field for the academic or strictly for the productive industry. It attempts to nurture higher degree exposure for our products, that will make them produce art and design which is functionally appropriate, aesthetically pleasing, culturally relevant, optimally engaging available resources in the environment.

This proposal on Benchmark Minimum Academic Standards (BMAS) for the postgraduate programmes in Environmental Studies discipline has been put in place for future accreditation of all postgraduate programmes offered in Nigerian Universities. The various disciplines are listed below and their various general philosophy, as well as those specific to the various levels of postgraduate programmes which they offer, are stated. The aims of the postgraduate in Fine Arts, Applied Arts, Industrial Design and Art and Design is development, production and motivation of highly skilled professionals and top academics' and researchers for the public, private, international organizations, universities and other institutions of higher learning as leaders in professional services.

5.1.1 PROGRAMMES IN FINE AND APPLIED ARTS/ARTS AND DESIGN

- (i) Postgraduate Diploma in Art & Design (PGD)
- (ii) Masters of Arts (Fine and Applied Arts) (MFA)
- (iii) Master of Arts (Art Education) (MA)
- (iv) Master of Arts (Art History) (MA)
- (v) Master of Technology (Industrial Design) (M.Tech)

5.1.2 POSTGRADUATE PROGRAMME IN FINE ARTS

- (i) Postgraduate Diploma in Fine Arts (PGD)
- (ii) Master of Fine Arts (MFA) Painting
- (iii) Master of Fine Arts (MFA) Sculpture
- (iv) Master of Arts (Art Education)
- (v) Master of Arts (Art History)
- (vi) Doctor of Philosophy (Art Education)
- (vii) Doctor of Philosophy (Art History)

5.1.3 POSTGRADUATE PROGRAMMES OFFERED IN INDUSTRIAL DESIGN

- i) Postgraduate Diploma in Industrial Design (PGD)
- (ii) Master of Arts Industrial Design (MA)
- (iii) Master of Science Industrial Design (M.Tech Industrial Design)
- (iv) Doctor of Philosophy (Ph.D) Industrial Design

A. Postgraduate Diploma Programmes (PGD)

- i) PGD in Art and Design
- ii) PGD in Industrial Design
- iii) PGD in Fine Arts

1. Postgraduate Diploma programmes in Art and Design

- Philosophy of the Programme

The idea of a postgraduate diploma programme is to produce a work ready Art and Design personnel with additional professional competency beyond the graduate level. It is to update Art and Design skills, techniques and ideas under a short term property period.

- Objectives/Aims

- to produce artists and designers for better performance in the world of information, communication and technology.
- to provide a short inservice course for graduates who are already in the industry.
- to serve as a means to remedy graduates with deficiencies arising from their initial training in order to qualify for higher degree studies.
- to train small scale art-cottage industry operators.

5.1.4 ADMISSION

a) Basic Admission Requirements

The criteria for admission into the PGD programmes will be as follows:

- i) Matriculation requirement of individual University including Mathematics and English Language.
- ii) A candidate with at least 3rd class or pass degree in Industrial Design and Glass Technology
- (iii) HND Upper Credit minimum from recognized institution may also be considered.

- b) **Areas of Specialization**
Although there are no areas of specialization in Postgraduate Diploma (PGD), it can be developed in any discipline depending on the needs and demands.
- c) **Duration of Programme**
- i) Full-Time PGD shall run for a minimum of three (3) Semesters and a maximum of four (4) Semesters.
- (ii) The Part-Time PGD shall run for a minimum of four (4) semesters and a maximum of six (6) semesters. Please note that maximum durations should be stated in the case of Environmental Sciences just like in other Faculties.
- d) **Requirement for Graduation**
A candidate must have fulfilled the following conditions to be awarded the Postgraduate Diploma:
- The candidate must pass a minimum of 28 credit Units made up of the following:
- 15 Units of Core Courses
 - 9 Units of Electives Courses
 - 4 Units of Projects
- e) **Domiciliation of the Programme**
The Postgraduate Diploma programme shall be domiciled in the relevant Department of the Faculty depending on the University.
- f) **Student Enrolment**
This should not be more than 40% of Postgraduate enrolment of Departments/Faculty.

5.1.5 ACADEMIC STANDARDS

- a) **Academic Regulations**
- i) **Academic Session**
An academic session consists of two semesters. Each semester normally comprises 15 weeks of teaching and two weeks for examinations.
- b) **Modular System**
All Postgraduate Diploma Programmes shall be run as Course Unit System. All courses should therefore be sub-divided into more or less self-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.

i) **Definition of Credit or Unit**

Credit units are weights attached to a course. One credit unit is equivalent to:

- One hour per week per semester of 15 weeks of lectures
- Two hours per week per semester of 15 weeks tutorial
- Three to five hours per week of 15 weeks laboratory/field work/studio.

c) **Programme Requirements**

i) **Registration Procedure**

Students shall normally complete registration for courses for the semester not later than two weeks after the start of the semester. Students cannot withdraw from a course after seven weeks of lectures in a given semester.

A student who fails to sit for examination for which he/she is registered is deemed to have failed the course.

Students who fail to sit for examination in more than two courses at the end of a given semester shall be deemed to have postponed registration of those courses till the next registration exercise.

a) **Good Standing**

To be in good standing, a student must in each semester have a Cumulative Grade Point Average (CGPA) of not less than 3.00

b) **Withdrawal**

Candidates with less than 3.00 CGPA shall remain in the programme for the 1st semester but shall be withdrawn if he/she fails to attain 3.00 CGPA at the end of the second semester.

c) **Attendance**

In order to be eligible for examination in a particular course, a student shall have attended a minimum of 75% of the total periods of formal instructions delivered for the course.

d) **Course Evaluation**

In the Postgraduate Diploma Programmes, assessment of students' achievements shall be based on:

- i) Course Examination
- ii) Term papers/Seminars
- iii) Other assignments.

e) **Continuous Assessment**

Continuous assessment shall be done through essays, tests, term papers, tutorial exercises, quizzes and home work.

Scores from continuous assessment shall constitute 30% of the final marks for courses which are primarily theoretical.

ii) **Examinations**

- a) In addition to continuous assessment, final examination shall be given for every course at the end of every semester.

The total scores obtainable for every course continuous assessment and final examination is 100%.

Continuous Assessment	30%	40%
Final Examination	70%	60%
Total		100%

- b) Each course shall normally be completed and examined at the end of the semester in which it is offered.

iii) **Pass Mark**

The minimum pass mark in a course shall be 50%

iv) **Grading System**

Grading of courses shall be done by a combination of percentage marks and letter grades translated into a graduated system of Grade Point Equivalents (GPE). For the purpose of determining a student's standing at the end of every semester, the Grade Point Average (GPA) system shall be used. The GPA is computed by dividing the total number of credit points (TCP) by the total number of units (TNU) for all the courses taken in the semester. The credit point for a course computed by multiplying the number of units for the course by the Grade Point Equivalent of the marks scored in the course. Each course shall be graded out of a minimum of 100 marks and assigned appropriate Grade Point Equivalent as in the following table:

Credit Units	% Scores	Letter Grades	Grade Points (GP)	Average (GPA)
Vary according to contact hours assigned To each course per week per semester, and according to load carried by students	70-100	A	5	Derived by multiplying I and IV and dividing by Total Credit Units
	60-69	B	4	
	50-59	C	3	
		F	0	

v) **Presentation of Results**

Results from the Postgraduate School Board of examiners shall be presented to Senate for approval.

vi) **Release of Results**

Results shall be released/published not later than 2 weeks after approval by the Senate.

vii) **External Examiner System**

The external examiner system shall be used at the end of the Postgraduate Diploma programme to assess the courses and projects.

The project shall be subject to oral examination where the student is required to show evidence that he/she carried out the work and had pertinent knowledge of the subject matter.

viii) **Postgraduate Diploma Classification**

The determination of the PGD shall be based on the Cumulative Grade Point Average (CGPA) earned at the end of the programme.

Cumulative Grade	Class of Diploma
4.50-5.00	Distinction
3.50-4.49	Credit
3.00-3.49	Merit/Pass
Below 3.00	Fail

5.1.6 RESOURCE REQUIREMENT FOR TEACHING AND LEARNING IN THE PROGRAMME

a) **Academic Staff**

i) **Teacher/Student Ratio**

The staff to student ratio for the Postgraduate programme is 1 to 10 for effective teaching and learning.

ii) **Academic Staff Work-Load**

An academic staff shall carry a minimum load of 3 contact hour per week for lecturers and tutorials.

iii) **Staffing**

There should be a minimum of 8 full time staff on ground in a Department. The teacher should have at least an M.A., MFA or M.Sc. degree with at least three years university teaching and rank not lower than Lecturer II.

b) **Non-Academic Staff**

The services of support staff, which are indispensable in the proper running of the programme as well as for administration, are required. It is important to recruit very competent senior technical staff to maintain teaching and research equipments. Universities should pay attention to optimum proportioning of the non-academic staff to avoid redundancy and overstaffing.

- c) **Computer Literacy**
With the computer age and application of information technology, both academic and non-academic staff should be sufficiently computer literate.
- d) **Student Course Evaluation**
There is a need to have students to evaluate the course at the end of the semester to know how well the course has been delivered and also for the general improvement of the course. The Dean of PG School should set up the modalities for carrying out the evaluation.

5.2 Postgraduate Diploma Programme in Industrial Design

5.2.1 Philosophy of the Programme

The philosophy of the programme is to help students acquire greater competence in industrial design and better understanding of the teaching/learning process. Emphasis is on high level research into Industrial Design.

Aims and Objectives

To produce highly skilled individuals with the capability of advancing knowledge in industrial technology, ceramics, textiles, graphics, printing technology and fashion design etc.

To produce a personnel with specialized advanced knowledge in various aspects of design technology, and philosophy of design.

5.2.2 ADMISSION

- a) **Basic Admission Requirements**
The criteria for admission into the PGD programme will be as follows:
 - i) Matriculation requirements of individual Universities including Mathematics and English Language.
 - ii) A candidate with at least 3rd class or pass degree in Industrial Design and Fine Arts
 - iii) HND Upper Credit minimum from recognized institutions may also be considered.
- b) **Areas of Specialization**
The areas of specialization are:
 - i) Glass Technology
 - ii) Scientific Glass Blowing
 - iii) Glass Casting Technology
 - iv) Ceramics
 - v) Graphics
 - vi) Textiles
 - vii) Printing Technology
 - viii) Fashion Design

- c) **Duration of Programme**
- i) Full-Time PGD shall run for a minimum of three (3) Semesters and a maximum of four (4) Semesters.
 - ii) The Part-Time PGD shall run for a minimum of four (4) semesters and a maximum of six (6) semesters.
- d) **Requirement for Graduation**
 A candidate must have fulfilled the following conditions to be awarded the Postgraduate Diploma:
- The candidate must pass a minimum of 28 credit Units made up of the following:
- 15 Units of Core Courses
 - 9 Units of Electives Courses
 - 4 Units of Projects
- e) **Domiciliation of the Programme**
 The Postgraduate Diploma programme shall be domiciled in the relevant Department of the Faculty depending on the University. Institutes can also award Postgraduate Diplomas (PGD).
- f) **Student Enrolments**
 This should not be more than 40% of Postgraduate enrolment of Departments/Faculty.

5.2.3 ACADEMIC STANDARDS

- a) **Academic Regulations**
- i) **Academic Session**
 An academic session consists of two semesters. Each semester normally comprises 15 weeks of teaching and two weeks for examinations.
 - ii) **Modular System**
 All Postgraduate Diploma Programmes shall be run as Course Unit System. All courses should therefore be sub-divided into more or less self-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 or Unit**
 Credit units are weights attached to a course. One credit unit is equivalent to:
 - One hour per week per semester of 15 weeks of lectures
 - Two hours per week per semester of 15 weeks tutorial
 - Three to five hours per week of 15 weeks laboratory/field work/studio.

b) **Programme Requirements**

i) **Registration Procedure**

Students shall normally complete registration for courses for the semester not later than two weeks after the start of the semester. Students cannot withdraw from a course after seven weeks of lectures in a given semester.

- ii) A Student who fails to sit for examination for which he/she is registered is deemed to have failed the course.

Students who fail to sit for examination in more than two courses at the end of a given semester shall be required to register for those courses again in the following session.

c) **Good Standing**

To be in good standing, a student must in each semester have a Cumulative Grade Point Average (CGPA) of not less than 3.00

d) **Withdrawal**

Candidates with less than 3.00 CGPA shall remain in the programme for the 1st semester but shall be withdrawn if he/she fails to attain 3.00 CGPA at the end of the second semester.

e) **Attendance**

In order to be eligible for examination in a particular course, a student shall have attended a minimum of 75% of the total periods of formal instructions delivered for the course.

f) **Course Evaluation**

In the Postgraduate Diploma Programmes, assessment of students' achievements shall be based on:

- i) Course Examination
- ii) Term papers/Seminars;
- iii) Other assignments.

g) **Continuous Assessment**

Continuous assessment shall be done through essays, tests, term papers, tutorial exercises, quizzes and homework.

Scores from continuous assessment shall constitute 30% of the final marks for courses which are primarily theoretical.

h) **Examination, Grading Procedure and Results**

i) **Examinations**

- a) In addition to continuous assessment, final examination shall be given for every course at the end of every semester.

The total scores obtainable for every course continuous assessment and final examination is 100%

Continuous Assessment	30%	40%
Final Examination	70%	60%
Total		100%

- b) Each course shall normally be completed and examined at the end of the semester in which it is offered.

ii) **Pass Mark**

The minimum pass mark in a course shall be 50%

iii) **Grading System**

Grading of courses shall be done by a combination of percentage marks and letter grades translated into a graduated system of Grade Point Equivalents (GPE). For the purpose of determining a student's standing at the end of every semester, the Grade Point Average (GPA) system shall be used. The GPA is computed by dividing the total number of credit points (TCP) by the total number of units (TNU) for all the courses taken in the semester. The credit point for a course computed by multiplying the number of units for the course by the Grade Point Equivalent of the marks scored in the course. Each course shall be graded out of a minimum of 100 marks and assigned appropriate Grade Point Equivalent as in the following table:

Credit Units	% Scores	Letter Grades	Grade Points (GP)	Average (GPA)
Vary according to contact hours assigned to each course per week per semester, and according to load carried by students	70-100	A	5	Derived by multiplying I and IV and dividing by Total Credit Units
	60-69	B	4	
	50-59	C	3	
		F	0	

iv) **Presentation of Results**

Results from the Postgraduate School Board of Examiners shall be presented to Senate for approval

- v) **Release of Results**
Results shall be released/published not later than 2 weeks after approval by the Senate.
- vi) **External Examiner System**
The external examiner system shall be used at the end of the Postgraduate Diploma programme to assess the courses and projects. The project shall be subject to oral examination where the student is required to show evidence that he/she carried out the work and had pertinent knowledge the subject matter.
- vii) **Postgraduate Diploma Classification**
The determination of the PGD shall be based on the Cumulative Grade Point Average (CGPA) earned at the end of the programme.

Cumulative Grade	Class of Diploma
4.50-5.00	Distinction
3.50-4.49	Credit
3.00-3.49	Merit/Pass
Below 3.00	Fail

5.2.4 RESOURCE REQUIREMENT FOR TEACHING AND LEARNING IN THE PROGRAMME

- a) **Academic Staff**
 - i) **Teacher/Student Ratio**
The staff to student ratio for the Postgraduate programme is 1 to 10 for effective teaching and learning.
 - ii) **Academic Staff Work-Load**
An academic staff shall carry a maximum load of 3 contact hours per week for lectures and tutorials.
 - iii) **Staffing**
There should be a minimum of 8 full-time staff on ground in a Department. The teacher should have at least an M.A. or M.Sc. degree with at least three years university teaching experience with the rank not lower than Lecturer II.
- b) **Non-Academic Staff**
The services of support staff, which are indispensable in the proper running of the programme as well as for administration, are required. It is important to recruit very competent senior technical staff to maintain teaching and research

equipments. Universities should pay attention to optimum proportioning of the non-academic staff to avoid redundancy and overstaffing.

- c) **Computer Literacy**
With the computer age and application of information technology, both academic and non-academic staff should be sufficiently computer literate.
- d) **Student course Evaluation**
There is a need to have students to evaluate the course at the end of the semester to know how well the course has been delivered and also for the general improvement of the course. The Dean of PG School should set up the modalities for carrying out the evaluation.

5.3 Postgraduate Diploma (PGD) in Fine Arts

Philosophy of the Programme

The philosophy of the programme is to develop individuals capable to contribute meaningfully in the world of art for academic and social development. The emphasis will be on developing individuals in all the various areas of specialization in Fine Arts Department.

Aims and Objectives

- The general aim of the postgraduate programme in Fine Arts is to produce artists, art educators, art historians, artists and designers with professional and intellectual capabilities to contribute meaningfully to the development of art and the community.
- To produce graduates in the Fine Arts (Painting, Sculpture, and art history) who will be able to teach in art schools.
- The specific objectives of the PGD is to produce artists, art educators and art historians who are capable to of applying appropriate problem solving principles and techniques in art.

5.3.1 ADMISSION

- a) **Admission Requirements**
 - i) Matriculation requirements of individual Universities including Mathematics and English Language.
 - ii) A candidate with at least 3rd class honours degrees in BA (Fine Arts), BA (Industrial Design) from any recognized University are eligible for admission.
 - iii) HND Upper Credit minimum from recognized institution may also be considered.

- b) **Areas of Specialization**
- Painting - Art Education
 - Sculpture - Art History
- c) **Duration of Programme**
- i) Full-Time PGD shall run for a minimum of three (3) semesters and a maximum of four (4) semesters.
 - ii) The Part-Time PGD shall run for a minimum of four (4) semesters and a maximum of six (6) semesters. Please note that maximum durations should be stated in the case of Environmental Sciences just like in other Faculties.
- d) **Requirement for Graduation**
 A candidate must have fulfilled the following conditions to be awarded the Postgraduate Diploma:
- The candidate must pass a minimum of 28 credit Units made up of the following:
- 15 Units of Core Courses
 - 9 Units of Elective Courses
 - 4 Units of Projects
- e) **Domiciliation of the Programme**
 The Postgraduate Diploma programme shall be domiciled in the relevant Department of Faculty depending on the University. Institutes can also award Postgraduate Diplomas (PGD).
- f) **Student Enrolments**
 This should not be more than 40% of Postgraduate enrolment of Departments/Faculty.

5.3.2 ACADEMIC STANDARDS

- a) **Academic Regulations**
- i) **Academic Session**
 An academic session consists of two semesters. Each semester normally comprises 15 weeks of teaching and two weeks for examinations.
 - ii) **Modular System**
 All Postgraduate Diploma Programmes shall be run as Course Unit System. All courses should therefore be sub-divided into more or less self-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.

b) **Continuous Assessment**

Continuous assessment shall be done through essays, tests, term papers, tutorial exercises, quizzes and homework.

Scores from continuous assessment shall constitute 30% of the final marks for courses which are primarily theoretical.

(c) **Examination, Grading Procedure and Results**

i) **Examinations**

a) In addition to continuous assessment, final examination shall be given for every course at the end of every semester.

The total scores obtainable for every course continuous assessment and final examination is 100%.

Continuous Assessment	30%	40%
Final Examination	70%	60%
Total	100%	

b) Each course shall normally be completed and examined at the end of the semester in which it is offered.

ii) **Pass Mark**

The minimum pass mark in a course shall be 50%

iii) **Grading System**

Grading of courses shall be done by a combination of percentage marks and letter grades translated into a graduated system of Grade Point Equivalents (GPE). For the purpose of determining a student's standing at the end of every semester, the Grade Point Average (GPA) system shall be used. The GPA is computed by dividing the total number of credit points (TCP) by the total number of units (TNU) for all the courses taken in the semester. The credit point for a course computed by multiplying the number of units for the course by the Grade Point Equivalent of the marks scored in the course. Each course shall be graded out of a minimum of 100 marks and assigned appropriate Grade Point Equivalent as in the following table:

Credit Units	% Scores	Letter Grades	Grade Points (GP)	Average (GPA)
Vary according to contact hours assigned to each course per week Per semester, and according to load carried by students	70-100	A	5	Derived by multiplying 1 and IV and dividing by Total Credit Units
	60-69	B	4	
	50-59	C	3	
		F	0	

iv) **Presentation of Results**

Results from the Postgraduate School Board of Examiners shall be presented to Senate for approval.

v) **Release of Results**

Results shall be released/published not later than 2 weeks after approval by the Senate.

vi) **External Examiner System**

The external examiner system shall be used at the end of the Postgraduate Diploma programme to assess the courses and projects.

The project shall be subject to oral examination where the student is required to show evidence that he/she carried out the work and had pertinent knowledge of the subject matter.

vii) **Postgraduate Diploma Classification**

The determination of the PGD shall be based on the Cumulative Grade Point Average (CGPA) earned at the end of the programme.

Cumulative Grade	Class of Diploma
4.50-5.00	Distinction
3.50-4.49	Credit
3.00-3.49	Merit/Pass
Below 3.00	Fail

5.3.3 RESOURCE REQUIREMENT FOR TEACHING AND LEARNING IN THE PROGRAMME

a) **Academic Staff**

i) **Teacher/Student Ratio**

The staff to student ratio for the Postgraduate programme is to be 1 to 10 for effective teaching and learning.

ii) **Academic Staff Work-Load**

An academic staff shall carry a minimum load of 3 contact hours per week for lectures and tutorials.

iii) **Staffing**

There should be a minimum of 8 full time staff on the ground in a Department. The teacher should have at least an M.Sc. degree with at least three years university teaching experience and a rank not lower than Lecturer II.

b) **Non-Academic Staff**

The services of support staff, which are indispensable in the proper running of the programme as well as for administration, are required. It is important to recruit very competent senior technical staff to maintain teaching and research equipment. Universities should pay attention to optimum proportioning of the non-academic staff to avoid redundancy and overstaffing.

c) **Computer Literacy**

With the computer age and application of information technology, both academic and non-academic staff should be sufficiently computer literate.

d) **Student course Evaluation**

There is a need to have students to evaluate the course at the end of the semester to know how well the course has been delivered and also for the general improvement of the course. The Dean of PG School should set up the modalities for carrying out the evaluation.

5.4 PROFESSIONAL MASTERS' DEGREE PROGRAMMES

- i) Master of Fine Arts (MFA) Painting
- ii) Master of Fine Arts (MFA) Sculpture
- iii) Master of Arts (MA) Art and Design
- iv) Master of Fine Arts (MFA) Fine and Applied Art

1. **Master of Fine Arts (MFA) Painting**

Philosophy

The philosophy of the Master of Fine Arts (Painting) programme is to develop highly skilled professional painter/artist for public, private and international organizations and well rounded intellectuals for social development.

The programme is designed to meet the needs of several talented individuals who wish to develop their potentials as possible leaders and experts in the field of arts.

Aims and Objectives

The aim of the programme is:

- To produce artists with professional and intellectual capabilities to contribute meaningfully to artistic development
- To produce an artist/painter with professional intellectual capabilities to contribute meaningfully to art world and in addressing the dynamic challenges in the society.
- To produce artist/painter who is capable of applying appropriate problem solving principles and techniques in painting design and color perceptions.
- To produce graduates in painting who will have opportunities of teaching art in schools and the knowledge required for understanding the practical analysis of problems related to art.

5.4.1 ADMISSION

a) Basic Admission Requirements for Masters Programme

The criteria for admission into the MFA Painting programme will be as follows:

- i) Matriculation requirements of individual universities which must be 5 '0' Level credit including Mathematics and English.
- ii) Candidates with B.A Fine Arts 2nd Second Lower Division from a recognized University.
- iii) Candidates with a PGD in Fine Arts at Credit level pass (i.e. 3.5 of 5.0 scale) or 60% on weighted percentage average can apply.

b) Programmes in Masters Degree

Programmes should be as specified in the individual Universities' prospectus i.e. as available in the University.

c) Areas of Specialization

Candidates can specialize in any of the areas as in the approved programmes of individual Universities.

d) Duration of Programme

- i) A full time Master's Programmes should run for a minimum of 3 semesters and a maximum of 4 semesters.

- ii) Part-time master's programmes should run for a minimum of 6 semesters and a maximum of 8 semesters.
 - iii) For extension beyond the specified maximum period, a special permission of the Senate shall be required.
- e) **Requirement of Graduation**
 To be awarded a Masters degree, a candidate must pass a minimum of 46 credit units made up of as follows:
- | | | |
|--------------------------------------|---|----------|
| 17 Core courses of 2 credit units | = | 34 |
| 2 Elective courses of 2 credit units | = | 4 |
| 8 project course of 8 units | = | 8 |
| Total | = | 46 units |
- A student shall carry out research in relevant areas of specialization and submit an acceptable thesis (six credit units compulsory).
 - A student shall present at least one seminar, submit and defend a thesis proposal.
- f) **Domain of the Masters Programme**
 All Master's degree programmes should be domiciled in the Department/Faculty of the Universities.
- g) **Student Enrolment**
 Student Enrolment shall be subject to the carrying capacity of the Department/Faculty.

5.4.2 ACADEMIC STANDARDS

- a) **Academic Regulations**
- i. **Academic Session**
 An academic session consists of two semesters. Each semester normally comprises 15 weeks of teaching and two weeks for examinations.
 - ii. **Modular System**
 All Masters Programmes shall be run under the Course Unit System. All courses should therefore be sub-divided into more or less self-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 or Unit**
 Credits are units attached to a course. One credit unit is equivalent to one hour per week per semester of 15 weeks of lectures or tutorials.

b) **Programmes Requirements**

i. **Registration Procedure**

Students shall normally complete registration for courses for the semester not later than two weeks after the start of the semester. A student cannot withdraw from a course after seven weeks of lectures in a given semester.

A student who fails to sit for examination for which he/she registered is deemed to have failed the course.

A student who fails to sit for more than two courses at the end of a given semester shall be deemed to have postponed registration in those courses till the following registration period.

c) **Good Standing**

To be in good standing, a student must in each semester have a Cumulative Grade Point Average (CGPA) of not less than 3.00

d) **Withdrawal**

A student whose cumulative grade point average is below 3.00 at the end of two consecutive semesters shall withdraw from the programme.

e) **Attendance**

In order to be eligible for examination in a particular course, a student shall have attended a minimum of 75% of the total periods of formal instructions delivered for the course.

f) **Course Evaluation**

In the Masters programmes, assessment of students' achievements shall be based on:

- Course Examination
- Term papers/seminars;
- Other assignments.

g) **Continuous Assessment**

Continuous assessment shall be done through essays, tests, term papers, tutorial exercises, quizzes and homework.

- Scores from continuous assessment shall constitute 30% of the final marks for courses which are primarily theoretical.

h) **Examinations, Grading Procedure and Results**

i. **Examinations**

- a) In addition to continuous assessment, final examination shall be given for every course at the end of every semester.

b) The total scores obtainable for every course shall be 100% as follows:

Continuous Assessment	30%	-	40%
Final Examination	70%	-	60%
Total	100%	-	100%

Each course shall normally be completed and examined at the end of the semester in which it is offered.

ii. **Pass Mark**

The minimum pass mark in a course shall be 50%

iii. **Grading System**

Grading of courses shall be done by a combination of percentage marks and letter grades translated into a graduated system of Grade Point Equivalents (GPE). For the purpose of determining a student's standing at the end of every semester, the Grade Point Average (GPA) system shall be used. The GPA is computed by dividing the total number of credit points (TCP) by the total number of units (TNU) for all the courses taken in the semester. The credit point for a course computed by multiplying the number of units for the course by the Grade Point Equivalent of the marks scored in the course. Each course shall be grade out of a minimum of 100 marks and assigned appropriate Grade Point Equivalent as in the following table:

Credit Units	% Scores	Letter Grades	Grade Points (GP)
Vary according to contact hours assigned to each course per week per semester, and according to load carried by students	70-100	A	5
	50-59	B	3
	Below 50	F	0

iv. **Presentation of Results**

Results from the Postgraduate School Board of Examiners shall be presented to Senate for approval.

v. **Release of Results**

Results shall be released/published not later than 2 weeks after approval by the Senate.

vi. **External Examiner System**

The external examiner system shall be used at the end of the Master's Degree programme to assess the courses and thesis.

5.4.3 RECOURCE REQUIREMENT FOR TEACHING AND LEARNING IN THE PROGRAMME

a. Academic Staff

i. Teacher/Student Ratio

The staff to student ratio for the Masters programme shall be 1:10 for effective teaching and learning.

ii. Academic Staff Work-Load

An academic staff shall carry a work load not exceeding the maximum prescribed by NUC.

iii. Staffing

There should be a minimum of 8 full time staff the ground in a Department. The teaching staff should have at least a Ph.D Degree with at least one year Postdoctoral University teaching experience.

iv. Supervision and Teaching

Holders of Master's with a minimum post-graduating experience of not less than three years may teach in the Masters programme. However, only holders of Ph.D degree with a minimum of one year Postdoctoral experience shall supervise Masters thesis.

b) Non-Academic Staff

The services of support staff, which are indispensable in the proper running of the programme as well as for administration, are required. It is important to recruit very competent senior technical staff to maintain teaching and research equipments. Universities should pay attention to optimum proportioning of the non-academic staff to avoid redundancy and overstaffing.

c) Computer Literacy

With the computer age and application of information technology, both academic and non-academic staff should be sufficiently computer literate.

d) Student Course Evaluation

There is a need to have students to evaluate the course at the end of the semester to know how well the course has been delivered and also for the general improvement of the course. The Dean of PG School should set up the modalities for carrying out the evaluation.

5.4.4 Master of Fine Arts (MFA) Sculpture

Philosophy

The philosophy of the Master of Arts in Fine Art (MFA) Sculpture is to develop highly skilled professional sculptors/artists for the public, private and international organizations, with well rounded intellectuals for academic and social development.

Aims and Objectives

- To produce sculptors with professional intellectual capabilities to contribute meaningfully to art development in addressing the dynamic challenges in the society.
- To produce interested individuals with the necessary competencies and skills to function effectively as academics in art studies.
- To produce highly skilled artists capable of facing a broad spectrum of Challenges of the information and communication technology in the world of art.

5.4.5 ADMISSION

a) Basic Admission Requirements for (MFA) Sculpture Programme

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

- i) Matriculation requirements of individual universities which must be 5'O level credits including Mathematics and English.
- ii) Candidates with B.A. Fine Arts not less than 2nd Second Class Lower Division from an approved University.
- iii) Candidates with PGD at credit level pass (i.e. 3.5 of 5.0 scale) or 60% on weighted percentage average.

b) Programmes in Masters Degree

Programmes should be as specified in the individual Universities' prospectus i.e. as available in the University.

c) Areas of Specialization

Candidates can specialize in any of the areas as in the approved programmes of individual Universities.

d) Duration of Programme

- i) A full time Master's programme should run for a minimum of 3 semesters and a maximum of 4 semesters
- ii) Part-time master's programmes should run for a minimum of 6 semesters and a maximum of 8 semesters.
- iii) For extension beyond the specified maximum period, a special permission of the Senate shall be required.

e) Requirement of Graduation

To be awarded a Masters degree candidate must pass a minimum of 46 credit units made up of as follows:

17 Core Courses of 2 credit units	-	34
2 Elective courses of 2 credit units	-	4

8 Project course of 8 units	-	8
Total	=	46 units

- A student shall carry out research in relevant areas of specialization and submit an acceptable thesis (six units compulsory).
- A student shall present at least one seminar, submit and defend a thesis proposal.

f) **Domain of the Masters Programme**

All Masters programmes should be domiciled in the Department/Faculty of the Universities. Institutes and Units should not be permitted to run masters programme.

g) **Student Enrolment**

Student Enrolment shall be subject to the carrying capacity of the Department/Faculty.

5.4.6 ACADEMIC STANDARDS

a) **Academic Regulations**

i) **Academic Session**

An academic session consists of two semesters. Each semester normally comprises 15 weeks of teaching and two weeks for examinations.

ii) **Modular System**

All Masters Programmes shall be run as Course Unit System. All courses should therefore be sub-divided into more or less self-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 or Unit**

Credit are units attached to a course. One credit unit is equivalent to one hour per week per semester of 15 weeks of lectures or tutorials.

b) **Programmes Requirements**

i) **Registration Procedure**

Students shall normally complete registration of courses for the semester not later than two weeks after the start of the semester. A student cannot withdraw from a course after seven weeks of lectures in a given semester.

A student who fails to sit for examination for which he/she registered is deemed to have failed the course.

A student who fails to sit for more than two courses at the end of a given semester should be deemed to have postponed registration of those courses till the following registration period.

c) **Good Standing**

To be in good standing, a student must in each semester have a cumulative Grade Point Average (CGPA) of not less than 3.00

d) **Withdrawal**

A student whose cumulative grade point average is below 3.00 at the end of two consecutive semesters shall withdraw from the programme.

e) **Attendance**

In order to be eligible for examination in a particular course, a student shall have attended a minimum of 75% of the total periods of formal instruction delivered for the course.

f) **Course Evaluation**

In the Masters Programmes, assessment of students' achievements shall be based on:

- Course Examination
- Term Papers/Seminars
- Other assignments.

g) **Continuous Assessment**

Continuous assessment shall be done through essays, tests, term papers, tutorial exercises, quizzes and homework.

- Scores from continuous assessment shall constitute 30% of the final marks for courses which are primarily theoretical.

h) **Examinations, Grading Procedure & Results**

i) **Examinations**

a) In addition to continuous assessment, final examination shall be given for every course at the end of every semester.

b) The total scores obtainable for every course shall be 100% as follows:

Continuous Assessment	30% - 40%
Final Examination	70% - 60%
Total	100% - 100%

Each course shall normally be completed and examined at the end of the semester in which it is offered.

ii) **Pass Mark**
The minimum pass mark in a course shall be 50%

iii) **Grading System**
Grading of courses shall be done by a combination of percentage marks and letter grades translated into a graduated system of Grade Point Equivalents (GPE). For the purpose of determining a student's standing at the end of every semester, the Grade Point Average (GPA) system shall be used. The GPA is computed by dividing the total number of credit points (TCP) by the total number of units (TNU) for all the courses taken in the semester. The credit point for a course computed by multiplying the number of units for the course by the Grade Point Equivalent of the marks scored in the course. Each course shall be graded out of a minimum of 100 marks and assigned appropriate Grade Point Equivalent as in the following table:

Credit Units	% Scores	Letter Grades	Grade Points (GP)	Average (GPA)
Vary according to contact hours assigned to each course per week per semester, and according to load carried by students	70 – 100	A	5	Derived by multiplying I and IV and dividing by Total Credit Units
	60 – 69	B	4	
	50 – 59	C	3	
		F	0	

iv) **Presentation of Results**
Results from the Postgraduate School Board of Examiners shall be presented to Senate for approval.

v) **Release of Results**
Results shall be released/published not later than 2 weeks after approval by the Senate.

vi) **External Examiner System**
The external examiner system shall be used at the end of the Postgraduate Diploma programme to assess the courses and projects.

The project shall be subject to oral examination where the student is required to show evidence that he/she carried out the work and had pertinent knowledge of the subject matter.

5.4.7 RESOURCE REQUIREMENT FOR TEACHING AND LEARNING IN THE PROGRAMME

a) **Academic Staff**

i) **Teacher/Student Ratio**

The staff to student ratio for the Postgraduate programme is 1 to 10 for effective teaching and learning.

ii) **Academic Staff Work-Load**

An academic staff shall carry a maximum load of 3 contact hour per week for lectures and tutorials.

iii) **Staffing**

There should be a minimum of 8 full time staff on ground in a Department. The teacher should have at least an M.Sc. degree with at least three years university teaching experience and rank not lower than Lecturer II.

b) **Non-Academic Staff**

The services of support staff, which are indispensable in the proper running of the programme as well as for administration, are required. It is important to recruit very competent senior technical staff to maintain teaching and research equipments. Universities should pay attention to optimum proportioning of the non-academic staff to avoid redundancy and overstaffing.

c) **Computer Literacy**

With the computer age and application of information technology, both academic and non-academic staff should be sufficiently computer literate.

d) **Student Course Evaluation**

There is a need to have students to evaluate the course at the end of the semester to know how well the course has been delivered and also for the general improvement of the course. The Dean of PG School should set up the modalities for carrying out the evaluation.

5.5 Master of Arts (M.A) Art and Design

Philosophy

The philosophy of the postgraduate programme in Fine and Applied Arts is to develop a crop of highly skilled professionals in the versions, sub-disciplines who are capable of improving the quality of life via purposive creative artworks in art and design. The production of self reliant artists and industrial designers is a sure way to contribute to a better environment.

Aims and Objectives

- To raise a high caliber of artists in the various studio options which can undertake research and exercise complete mastery of art production, ideas, materials and techniques.
- To provide individuals with relevant competencies and skills to operate in any visual arts options.
- To produce artists who can function effectively as professionals in my specialization of the visual and industrial design.

5.5.1 ADMISSION

a) **Basic Admission Requirements for Masters' Programme.**

The criteria for admission into the M.A Art and Design programme will be as follows;

- i) Matriculation requirements of individual universities which must be 5 'O' level credits including Mathematics and English.
- ii) Candidates with B.A Fine Arts not less than 2nd Lower Division from a recognized university.
- iii) Candidates with a PGD at credit level pass (i.e 3.5 of 5.0 scale) or 60% on weighted percentage average.

b) **Programmes in Masters' Degree**

Programmes should be specified in the individual Universities' prospectus i.e. as available in the University.

c) **Areas of Specialization**

Candidates can specialize in any of the areas as in the approved programmes of individual Universities.

d) **Duration of Programme**

- i) A full time Master's Programme should run for a minimum of 3 semesters and a maximum of 4 semesters.
- ii) Part-time master's programmes should run for a minimum of 6 semesters and a maximum of 8 semesters.
- iii) For extension beyond the specified maximum period, a special permission of the Senate shall be required.

e) **Requirement of Graduation**

To be awarded a Masters degree, a candidate must pass a minimum of 24 credit units made up of as follows:

17 Core courses of 2 credit units	-	34
2 Elective Courses	-	4
8 project course of 8 units	-	8
Total	=	46 units

- A student shall carry out research in relevant areas of specialization and submit an acceptable thesis (six credit units compulsory).
- A student shall present at least one seminar, submit and defend a thesis proposal.

f) **Domain of the Masters Programme**

All Masters programmes should be domiciled in the Department/Faculty of the Universities. Institutes and Units should not be permitted to run masters programmes.

g) **Student Enrolment**

Student Enrolment shall be subject to the carrying capacity of the Department/Faculty.

5.5.2 ACADEMIC STANDARDS

a) **Academic Regulations**

i) **Academic Session**

An academic session consists of two semesters. Each semester normally comprises 15 weeks of teaching and two weeks for examinations.

ii) **Modular System**

All Masters Programmes shall be run as Course Unit System. All Courses should therefore be sub-divided into more or less self-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 or Unit.**

Credits are units attached to a course. One credit unit is equivalent to one hour per week per semester 15 weeks of lectures or tutorials.

b) **Programme Requirements**

i) **Registration Procedure**

Students shall normally complete registration for courses for the semester not later than two weeks after the start of the semester. A student cannot withdraw from a course after seven weeks of lectures in a given semester.

A student who fails to sit for examination for which he/she has registered is deemed to have failed the course.

A student who fails to sit for more than two courses at the end of a given semester shall be required to register those courses all over again at the next registration period.

c) **Good Standing**

To be in good standing, students must in each semester have a cumulative Grade Point Average (CGPA) of not less than 3.00.

d) **Withdrawal**

A student whose cumulative grade point average is below 3.00 at the end of two consecutive semesters shall withdraw from the programme.

i) **Attendance**

In order to be eligible for examination in a particular course, a student shall have attended a minimum of 75% of the total periods of formal instructions delivered for the course.

ii) **Course Evaluation**

In the Masters Programmes, assessment of students' achievements shall be based on:

- Course Examination
- Term Papers/Seminars;
- Other assignments.

iii) **Continuous Assessment**

Continuous assessment shall be done through essays, tests, term papers, tutorial exercises, quizzes and homework.

- Scores from continuous assessment shall constitute 30% of the final marks for courses which are primarily theoretical.

e) **Examinations, Grading Procedure & Results.**

i. **Examinations**

- a) In addition to continuous assessment, final examination shall be given for every course at the end of every semester.
- b) The total scores obtainable for every course shall be 100% as follows:

Continuous Assessment 30%-40%

Final Examination	70%-60%
Total	100%-100%

Each course shall normally be completed and examined at the end of the semester in which it is offered.

ii. **Pass Mark**

The minimum pass mark in a course shall be 50%.

iii. **Grading System**

Grading of courses shall be done by a combination of percentage marks and letter grades translated into a graduated system of Grade Point Equivalents (GPE). For the purpose of determining a student's standing at the end of every semester, the Grade Point Average (GPA) system shall be used. The GPA is computed by dividing the total number of points (TCP) by the total number of units (TNU) for all the courses taken in the semester. The credit point for a course computed by multiplying the number of units for the course by the Grade Point Equivalent of the marks scored in the course. Each course shall be graded out of a minimum of 100 marks and assigned appropriate Grade Point Equivalent as in the following table:

Credit Units	% Scores	Letter Grades	Grade Points (GP)	Average (GPA)
Vary according to contact hours assigned to each course per week per semester, and according to load carried by students.	70-100	A	5	Derived by multiplying I and IV and dividing by Total Credit Units.
	60-69	B	4	
	50-59	C	3	
		F	0	

iv. **Presentation of Results.**

Results from the Postgraduate School Board of Examiners shall be presented to Senate for approval.

v. **Release of Results**

Results shall be released/published not later than 2 weeks after approval by the Senate.

vi) **External Examiner System.**

The external examiner system shall be used at the end of the Postgraduate Diploma programme to assess the courses and projects.

The project shall be subject to oral examination where the student is required to show evidence that he/she carried out the work and had pertinent knowledge of the subject matter.

5.5.3 RESOURCE REQUIREMENT FOR TEACHING AND LEARNING IN THE PROGRAMME

a) Academic Staff

i) Teacher/Student Ratio

The staff to student ratio for the Postgraduate Programme is 1 to 10 for effective teaching and learning.

ii) Academic Staff Work-Load

An Academic staff shall carry a maximum load of 3 contact hours per week for lecturers and tutorials.

iii) Staffing

There should be a minimum of 8 full time staff on ground in a Department. The teacher should have at least MFA/M.Sc. degree with at least three years university teaching experience and rank not lower than lecturer II.

b) Non-Academic Staff

The services of support staff, which are indispensable in the proper running of the programme as well as for administration are required. It is important to recruit very competent senior technical staff to maintain teaching and research equipments. Universities should pay attention to optimum proportioning of the non-academic staff to avoid redundancy and overstaffing.

c) Computer Literacy

With the computer age and application of information technology, both academic and non-academic staff should be sufficiently computer literate.

d) Student Course Evaluation

There is a need to have students to evaluate the course at the end of the semester to know how well the course has been delivered and also for the general improvement of the course. The Dean of PG School shall set up the modalities for carrying out the evaluation.

5.6 Master of Fine Arts (Fine and Applied Arts)

Philosophy

The Philosophy of training in Fine and Applied Arts (the visual Arts) is to enable individuals develop their artistic skills with regards to accurate experiences in drawing, painting, sculpture and related fields. It is expected that with this knowledge a great deal of studies and experiences will be made to solve Nigeria's problem artistically and technologically.

Aims and Objectives

- To produce artists and designers capable of understanding and solving complex problems in the field of Fine and Applied Arts.
- To train competent artists with knowledgeable Fine Art processes, use of materials and skill and their techniques and technology and management.
- To promote adequate general knowledge and specific skills and techniques to enhance the effective performance in special areas with technological methods.

5.6.1 ADMISSION

a) Basic Admission Requirements for Masters' Programme

The criteria for admission into the M.A Fine and Applied Arts programme will be as follows:

- i) Matriculation requirement of individual universities which must be 5 'O' level credits including Mathematics and English.
- ii) Candidates with B.A Fine and Applied Arts not less than 2nd second class lower Division from a recognized University.
- iii) Candidates with a PGD at credit level pass (i.e. 3.5 of 5.0 scale) or 60% on weighted percentage average.

b) Programmes in Masters' Degree

Programmes should be as specified in the individual Universities' prospectus i.e. as available in the University.

c) Areas of Specialization

Candidates can specialize in any of the areas as in the approved programmes of individual Universities.

d) Duration of Programme

- i. A full time Master's Programme should run for a minimum of 3 semesters and a maximum of 4 semesters.
- ii. Part-time master's programmes should run for a minimum of 6 semesters and a maximum of 8 semesters.
- iii. For extension beyond the specified maximum period, a special permission of the Senate shall be required.

e) Requirement of Graduation

To be awarded a Masters degree candidates must pass a minimum of 46 credit units made up of as follows:

17 Core courses of 2 credit units	-	34
2 Elective courses of 2 credit units	-	4

8 project courses of 8 units	-	8
Total	=	46 units

- A student shall carry out research in relevant areas of specialization and submit an acceptable thesis (six credit units compulsory).
- A student shall present at least one seminar, submit and defend a thesis proposal.

f) **Domain of the Masters Programme**

All Masters programmes should be domiciled in the Department/Faculty of the Universities. Institutes and Units should not be permitted to run masters programme.

g) **Student Enrolment**

Student Enrolment shall be subject to the carrying capacity of the Department/Faculty.

5.6.2 ACADEMIC STANDARDS

a) **Academic Regulations**

i) **Academic Session**

An academic session consists of two semesters. Each semester normally comprises 15 weeks of teaching and two weeks for examinations.

ii) **Modular System**

All Masters Programmes shall be run as Course Unit System. All courses should therefore be sub-divided into more or less self-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 or Unit**

Credits are units attached to a course. One credit unit is equivalent to one hour per week per semester of 15 weeks of lectures or tutorials.

b) **Modular System**

i) **Registration Procedure**

Students shall normally complete registration for the semester not later than two weeks after the start of the semester. A student cannot withdraw from a course after seven weeks of lectures in a given semester.

A student who fails to sit for examination for which he/she registered is deemed to have failed the course.

A student who fails to sit for examination in more than two courses at the end of a given semester shall be required to register those courses again at the beginning of the next registration period.

a) **Good Standing**

To be in good standing, a student must in each semester have a Cumulative Grade Point Average (CGPA) of not less than 3.00.

b) **Withdrawal**

A student whose cumulative grade point average is below 3.00 at the end of two consecutive semesters shall withdraw from the programme.

c) **Attendance**

In order to be eligible for examination in a particular course, a student shall have attended a minimum of 75% of the total periods of formal instructions delivered for the course.

d) **Course Evaluation**

In the Masters Programmes, assessment of student's achievements shall be based on:

- Course Examination
- Term Papers/Seminars;
- Other assignments.

ii) **Continuous Assessment**

Continuous Assessment shall be done through essays, tests, term papers, tutorial exercises, quizzes and homework.

- Scores from continuous assessment shall constitute 30% of the final marks of courses which are primarily theoretical.

iii) **Examinations, Grading Procedure & Results**

i) **Examination**

- a) In addition to continuous assessment, final examination shall be given for every course at the end of every semester.
- b) The total scores obtainable for every course shall be 100% as follows:

Continuous Assessment	30% - 40%
Final Examination	70% - 60%
Total	100% - 100%

Each course shall normally be completed and examined at the end of the semester in which it is offered.

ii) **Pass Mark**

The minimum pass mark in a course shall be 50%.

iii) **Grading System**

Grading of courses shall be done by a combination of percentage marks and letter grades translated into a graduated system of Grade Point Equivalents (GPE). For the purpose of determining a student's standing at

the end of every semester, the Grade Point Average (GPA) system shall be used. The GPA is computed by dividing the total number of credit points (TCP) by the total number of units (TNU) for all the courses taken in the semester. The credit point for a course computed by multiplying the number of units for the course by the Grade Point Equivalent of the marks scored in the course. Each course shall be graded out of a minimum of 100 marks and assigned appropriate Grade Point Equivalent as in the following table:

Credit Units	% Scores	Letter Grades	Grade Points (GP)	Average (GPA)
Vary according to contact hours assigned to each course per week per semester, and according to load carried by students.	70-100	A	5	Derived by multiplying I and IV and dividing by Total Credit Units.
	60-69	B	4	
	50-59	C	3	
		F	0	

vi. **Presentations of Results.**

Results from the Postgraduate School Board of Examiners shall be presented to Senate for approval.

vii. **Release of Results**

Results shall be released/published not later than 2 weeks after approval by the Senate.

vii) **External Examiner System.**

The external examiner system shall be used at the end of the Postgraduate Diploma programme to assess the courses and projects.

The project shall be subject to oral examination where the student is required to show evidence that he/she carried out the work and had pertinent knowledge of the subject matter.

5.6.3 RESOURCE REQUIREMENT FOR TEACHING AND LEARNING IN THE PROGRAMME

a) **Academic Staff**

i) **Teacher/Student Ratio**

The staff to student ratio for the Postgraduate Programme shall be 1 to 10 for effective teaching and learning.

ii) **Academic Staff Work-Load**

An Academic staff shall carry a maximum load of 3 contact hour per week for lecturers and tutorials.

iii) **Staffing**

There should be a minimum of 8 full time staff on ground in a Department. The teacher should have at least M.Sc. degree with at least three years university teaching experience and rank not lower than Lecturer II.

b) **Non-Academic Staff**

The services of support staff, which are indispensable in the proper running of the programme as well as for administration are required. It is important to recruit very competent senior technical staff to maintain teaching and research equipment. Universities should pay attention to optimum proportioning of the non-academic staff to avoid redundancy and overstaffing.

c) **Computer Literacy**

With the computer age and application of information technology, both academic and non-academic staff should be sufficiently computer literate.

d) **Student Course Evaluation**

There is a need to have students to evaluate the course at the end of the semester to know how well the course has been delivered and also for the general improvement of the course. The Dean of PG School set up the modalities for carrying out the evaluation.

5.7 **Master of Technology (M.Tech) Industrial Design Philosophy**

With the quest for technological development of Nigeria, the need to develop professionals that could help the country achieves the Milenium Development Goals (MDGs). The programme is designed to achieve such goals.

Aims and Objectives

- To produce highly efficient professional artists for the productive industry.
- To produce both short and long term training facilities aimed at improving and upgrading plans as well as for improved productivity and performance in the potential high level manpower for development plans as well as for improved productivity and performance in the private sector.

5.7.1 **ADMISSION**

a) **Basic Admission Requirements for Masters of Technology (M.Tech) Industrial Design**

The criteria for admission into the Master of Technology (M.Tech) programme will be as follows:

- i) Matriculation requirement of individual universities which must be 5 'O' level credits including Mathematics and English.

- ii) Candidates with B.A Tech, B.A Fine and Applied Arts with not less than 2nd Second Class Lower Division from a recognized University.
- iii) Candidates with a PGD at credit level pass (i.e 3.5 of 5 point scale) or 60% on weighted percentage average.
- b) Programmes in Masters Degree**
Programmes should be as specified in the individual Universities' prospectus i.e. as available in the University.
- c) Areas of Specialization**
Candidates can specialize in any of the areas as in the approved programmes of individual Universities.
- d) Duration of Programme**
- i. A full time Master's Programme should run for a minimum of 3 semesters and a maximum of 4 semesters.
 - ii. Part-time master's programmes should run for a minimum of 6 semesters and a maximum of 8 semesters.
 - iii. For extension beyond the specified maximum period, a special permission of the Senate shall be required.
- e) Requirement of Graduation.**
To be awarded a Masters degree candidates must pass a minimum of 24 credit units made up of as follows:
- | | | |
|--------------------------------------|---|----------|
| 17 Core courses of 2 credit units | - | 34 |
| 2 Elective courses of 2 credit units | - | 4 |
| 8 project course of 8 units | - | 8 |
| Total | = | 46 units |
- A student carry out research in relevant areas of specialization and submit an acceptable thesis (six credit units compulsory).
 - A student shall present at least one seminar, submit and defend a thesis proposal.
- f) Domain of the Masters Programme**
All Masters programmes should be domiciled in the Department/Faculty of the Universities. Institutes and Units should not be permitted to run masters programme.
- g) Student Enrolment**
Student Enrolment shall be subject to the carrying capacity of the Department/Faculty.

5.7.2 ACADEMIC STANDARDS

a) **Academic Regulations**

i) **Academic Session**

An academic session consists of two semesters. Each semester normally comprises 15 weeks of teaching and two weeks for examinations.

ii) **Modular System**

All Masters Programmes shall be run as Course Unit System. All courses should therefore be sub-divided into more or less self-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 or Unit**

Credit are units attached to a course. One credit unit is equivalent to one hour per week per semester of 15 weeks of lectures or tutorials.

b) **Programme Requirements**

i) **Registration Procedure**

Students shall normally complete registration for the semester not later than two weeks after the start of the semester. A student cannot withdraw from a course after seven weeks of lectures in a given semester.

A student who fails to sit for examination for which he/she registered is deemed to have failed the course.

A student who fails to sit for examination in more than two courses at the end of a given semester shall be deemed not to have registered those courses in that session.

a) **Good Standing**

To be in good standing, a student must in each semester have a Cumulative Grade Point Average (CGPA) of not less than 3.00.

b) **Withdrawal**

A student whose cumulative grade point average is below 3.00 at the end of two consecutive semesters shall withdraw from the programme.

c) **Attendance**

In order to be eligible for examination in a particular course, a student shall have attended a minimum of 75% of the total periods of formal instructions delivered for the course.

d) **Course Evaluation**

In the Masters Programmes, assessment of student's achievements shall be based on:

- Course Examination

- Term Papers/Seminars;
- Other assignments.

e) **Continuous Assessment**

Continuous Assessment shall be done through essays, tests, term papers, tutorial exercises, quizzes and homework.

- Scores from continuous assessment shall constitute 30% of the final marks of courses which are primarily theoretical.

f) **Examinations, Grading Procedure & Results**

g) **Examination**

- a) In addition to continuous assessment, final examination shall be given for every course at the end of every semester.
- b) The total scores obtainable for every course shall be 100% as follows:

Continuous Assessment	30% - 40%
Final Examination	70% - 60%
Total	100% - 100%

Each course shall normally be completed and examined at the end of the semester in which it is offered.

ii) **Pass Mark**

The minimum pass mark in a course shall be 50%.

iii) **Grading System**

Grading of courses shall be done by a combination of percentage marks and letter grades translated into a graduated system of Grade Point Equivalents (GPE). For the purpose of determining a student's standing at the end of every semester, the Grade Point Average (GPA) system shall be used. The GPA is computed by dividing the total number of credit points (TCP) by the total number of units (TNU) for all the courses taken in the semester. The credit point for a course computed by multiplying the number of units for the course by the Grade Point Equivalent of the marks scored in the course. Each course shall be graded out of a minimum of 100 marks and assigned appropriate Grade Point Equivalent as in the following table:

Credit Units	% Scores	Letter Grades	Grade Points (GP)	Average (GPA)
Vary according to contact hours assigned to each course per week per semester, and according to load carried by students.	70-100	A	5	Derived by multiplying I and IV and dividing by Total Credit Units.
	60-69	B	4	
	50-59	C	3	
		F	0	

- iv) **Presentations of Results.**
Results from the Postgraduate School Board of Examiners shall be presented to Senate for approval.
- v) **Release of Results**
Results shall be released/published not later than 2 weeks after approval by the Senate.
- vi) **External Examiner System.**
The external examiner system shall be used at the end of the Postgraduate programme to assess the courses and projects.

The project shall be subject to oral examination where the student is required to show evidence that he/she carried out the work and had pertinent knowledge of the subject matter.

5.7.3 RESOURCE REQUIREMENT FOR TEACHING AND LEARNING IN THE PROGRAMME

- a) **Academic Staff**
 - i) **Teacher/Student Ratio**
The staff to student ratio for the Postgraduate Programme is 1 to 10 for effective teaching and learning.
 - ii) **Academic Staff Work-Load**
An Academic staff shall carry a maximum load of 3 contact hour per week for lecturers and tutorials.
 - iii) **Staffing**
There should be a minimum of 8 full time staff on ground in a Department. The teacher should have at least M.Sc. degree with at least three years university teaching experience and rank not lower than Lecturer II.
- b) **Non-Academic Staff**
The services of support staff, which are indispensable in the proper running of the programme as well as for administration are required. It is important to recruit very competent senior technical staff to maintain teaching and research equipments. Universities should pay attention to optimum proportioning of the non-academic staff to avoid redundancy and overstaffing.
- c) **Computer Literacy**
With the computer age and application of information technology, both academic and non-academic staff should be sufficiently computer literate.

d) **Student Course Evaluation**

There is a need to have students to evaluate the course at the end of the semester to know how well the course has been delivered and also for the general improvement of the course. The Dean of PG School set up the modalities for carrying out the evaluation.

5.8 ACADEMIC MASTER'S DEGREE PROGRAMMES

1. **Master of Art in Art Education (M.A)**
2. **Master of Arts in Art History (M.A)**
3. **Master of Arts in Industrial Design (M.A)**
4. **Master of Science (Industrial Design) Glass Technology.**

Masters of Arts (Arts Education)

The philosophy of the Master of Arts Programme is to prepare graduates not only in the latest theory and practice in art education but with reality based practicum experiences for national job market. The programme is designed with a view to give due weight to each of theory and practice in Art through lectures, seminars, research and field investigators.

Aims and Objectives

- To produce art educators with professional and intellectual capabilities to contribute meaningfully to art education development and addressing the dynamic changes and challenges in our society.
- To provide students with knowledge in art and skill to enhance their performance in research capable of applying appropriate problem-solving in Nigerian art education.
- To produce highly skilled art educators capable of facing a broader spectrum of challenges in art education and who will have opportunities for teaching and research in arts schools and higher institutions.

5.8.1 ADMISSION

- a) Admission Requirements for the programme, the criteria education programme will be as follows:
- i) Matriculation requirement of individual universities which must be 5 'O' level credits including Mathematics and English.
 - ii) Candidates with 2nd Class Lower Division, Bachelors degree from an approved university.
 - iii) Candidates with a PGD at credit level pass (i.e 3.5 of 5.0 scale) or 60% on weighted percentage average.

- b) **Programmes in Masters Degree**
Programmes should be as specified in the individual Universities' prospectus i.e. as available in the University.
- c) **Areas of Specialization**
Candidates can specialize in any of the areas as in the approved programmes of individual Universities.
- d) **Duration of Programme**
- i) A full time Master's Programmes should run for a minimum of 3 semesters and a maximum of 4 semesters.
 - ii) Part-time master's programmes should run for a minimum of 6 semesters and a maximum of 8 semesters.
 - iii) For extension beyond the specified maximum period, a special permission of the Senate shall be required.
- e) **Requirement of Graduation.**
To be awarded a Masters degree candidates must pass a minimum of 24 credit units made up of as follows:
- | | | |
|--------------------------------------|---|----------|
| 17 Core courses of 2 credit units | - | 34 |
| 2 Elective courses of 2 credit units | - | 4 |
| 8 project course of 8 units | - | 8 |
| Total | = | 46 units |
- A student carry out research in relevant areas of specialization and submit an acceptable thesis (six credit units compulsory).
 - A student shall present at least one seminar, submit and defend a thesis proposal.
- f) **Domain of the Masters Programme**
All Masters programmes should be domiciled in the Department/Faculty of the Universities. Institutes and Units should not be permitted to run masters programme.
- g) **Student Enrolment**
Student Enrolment shall be subject to the carrying capacity of the Department/Faculty.

5.8.2 ACADEMIC STANDARDS

a) Academic Regulations

i) Academic Session

An academic session consists of two semesters. Each semester normally comprises 15 weeks of teaching and two weeks for examinations.

ii) Modular System

All Masters Programmes shall be run as Course Unit System. All courses should therefore be sub-divided into more or less self-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 or Unit

Credit are units attached to a course. One credit unit is equivalent to one hour per week per semester of 15 weeks of lectures or tutorials.

b) Programme Requirements

i) Registration Procedure

Students shall normally complete registration for the semester not later than two weeks after the start of the semester. A student cannot withdraw from a course after seven weeks of lectures in a given semester.

A student who fails to sit for examination for which he/she registered is deemed to have failed the course.

A student who fails to sit for examination in more than two courses at the end of a given semester shall be deemed not to have registered for those courses in the first place.

a) Good Standing

To be in good standing, a student must in each semester have a Cumulative Grade Point Average (CGPA) of not less than 3.00.

b) Withdrawal

A student whose cumulative grade point average is below 3.00 at the end of two consecutive semesters shall withdraw from the programme.

c) Attendance

In order to be eligible for examination in a particular course, a student shall have attended a minimum of 75% of the total periods of formal instructions delivered for the course.

d) Course Evaluation

In the Masters Programmes, assessment of student's achievements shall be based on:

- Course Examination

- Term Papers/Seminars;
- Other assignments.

e) **Continuous Assessment**

Continuous Assessment shall be done through essays, tests, term papers, tutorial exercises, quizzes and homework.

- Scores from continuous assessment shall constitute 30% of the final marks of courses which are primarily theoretical.

f) **Examinations, Grading Procedure & Results**

i) **Examination**

In addition to continuous assessment, final examination shall be given for every course at the end of every semester.

The total scores obtainable for every course shall be 100% as follows:

Continuous Assessment	30% - 40%
Final Examination	70% - 60%
Total	100% - 100%

Each course shall normally be completed and examined at the end of the semester in which it is offered.

ii) **Pass Mark**

The minimum pass mark in a course shall be 50%.

iii) **Grading System**

Grading of courses shall be done by a combination of percentage marks and letter grades translated into a graduated system of Grade Point Equivalents (GPE). For the purpose of determining a student's standing at the end of every semester, the Grade Point Average (GPA) system shall be used. The GPA is computed by dividing the total number of credit points (TCP) by the total number of units (TNU) for all the courses taken in the semester. The credit point for a course computed by multiplying the number of units for the course by the Grade Point Equivalent of the marks scored in the course. Each course shall be graded out of a minimum of 100 marks and assigned appropriate Grade Point Equivalent as in the following table:

Credit Units	% Scores	Letter Grades	Grade Points (GP)	Average (GPA)
Vary according to contact hours assigned to each course per week per semester, and according to load carried by students.	70-100	A	5	Derived by multiplying I and IV and dividing by Total Credit Units.
	60-69	B	4	
	50-59	C	3	
		F	0	

- iv) **Presentations of Results.**
Results from the Postgraduate School Board of Examiners shall be presented to Senate for approval.
- v) **Release of Results**
Results shall be released/published not later than 2 weeks after approval by the Senate.
- vi) **External Examiner System**
The external examiner system shall be used at the end of the programme to assess the courses and projects.

The project shall be subject to oral examination where the student is required to show evidence that he/she carried out the work and had pertinent knowledge of the subject matter.

5.8.3 RESOURCE REQUIREMENT FOR TEACHING AND LEARNING IN THE PROGRAMME

- a) **Academic Staff**
- i) **Teacher/Student Ratio**
The staff to student ratio for the Postgraduate Programme shall be 1 to 10 for effective teaching and learning.
- ii) **Academic Staff Work-Load**
An Academic staff shall carry a maximum load of 3 contact hour per week for lectures and tutorials.
- iii) **Staffing**
There should be a minimum of 8 full time staff on ground in a Department. The teacher should have at least M.Sc. degree with at least three years university teaching experience and rank not lower than Lecturer II.

- b) **Non-Academic Staff**
The services of support staff, which are indispensable in the proper running of the programme as well as for administration are required. It is important to recruit very competent senior technical staff to maintain teaching and research equipments. Universities should pay attention to optimum proportioning of the non-academic staff to avoid redundancy and overstaffing.
- c) **Computer Literacy**
With the computer age and application of information technology, both academic and non-academic staff should be sufficiently computer literate.
- d) **Student Course Evaluation**
There is a need to have students to evaluate the course at the end of the semester to know how well the course has been delivered and also for the general improvement of the course. The Dean of PG School set up the modalities for carrying out the evaluation.

5.9 Masters of Arts (Art History)

Philosophy

The philosophy of the Master of Arts history programme is to develop high intellectuals in the area of art history, aesthetics, art critics who wish to become exemplary facilitators, interpreters and advocates of critical cultural practices at multiple sites in the public sphere.

Aims and Objectives

- To produce individuals with a deep knowledge in traditional cultural art, heritage with critical and analytical thinking in art who can contribute to aesthetic and cultural life of the community.
- To produce individuals who can explore the rich cultural, traditional art heritage through research.
- To produce individuals with highly qualified researchers in art history to serve the needs of higher institutions of learning in Nigeria.

5.9.1 ADMISSION

a) **Basic Admission Requirements for Masters Programme**

The criteria for admission into the M.A (Art History) programme will be as follows:

- i) Matriculation requirement of individual universities which must be 5 'O' level credits including Mathematics and English.
- ii) Candidates with B. A. (Art History) not less than 2nd Class Lower Division from a recognized University.
- iii) Candidates with a PGD at credit level pass (i.e 3.5 of 5.0 scale) or 60% on weighted percentage average.

- b) **Programmes in Masters Degree**
Programmes should be as specified in the individual Universities' prospectus i.e. as available in the University.
- c) **Areas of Specialization**
Candidates can specialize in any of the areas as in the approved programmes of individual Universities.
- d) **Duration of Programme**
- i) A full time Master's Programme should run for a minimum of 3 semesters and a maximum of 4 semesters.
 - ii) Part-time master's programmes should run for a minimum of 6 semesters and a maximum of 8 semesters.
 - iii) For extension beyond the specified maximum period, a special permission of the Senate shall be required.
- e) **Requirements of Graduation.**
To be awarded a Masters degree candidates must pass a minimum of 24 credit units made up of as follows:
- | | | |
|--------------------------------------|---|----------|
| 17 Core courses of 2 credit units | - | 34 |
| 2 Elective courses of 2 credit units | - | 4 |
| 8 project course of 8 units | - | 8 |
| Total | = | 46 units |
- A student shall carry out research in relevant areas of specialization and submit an acceptable thesis (six credit units compulsory).
 - A student shall present at least one seminar, submit and defend a thesis proposal.
- f) **Domain of the Masters Programme**
All Masters programmes should be domiciled in the Department/Faculty of the Universities. Institutes and Units should not be permitted to run masters programmes.
- g) **Student Enrolment**
Student Enrolment shall be subject to the carrying capacity of the Department/Faculty.

5.9.2 ACADEMIC STANDARDS

a) **Academic Regulations**

i) **Academic Session**

An academic session consists of two semesters. Each semester normally comprises 15 weeks of teaching and two weeks for examinations.

ii) **Modular System**

All Masters Programmes shall be run as Course Unit System. All courses should therefore be sub-divided into more or less self-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 or Unit**

Credits are units attached to a course. One credit unit is equivalent to one hour per week per semester of 15 weeks of lectures or tutorials.

b) **Programmes Requirements**

i) **Registration Procedure**

Students shall normally complete registration for courses for the semester not later than two weeks after the start of the semester. A student cannot withdraw from a course after seven weeks of lectures in a given semester.

A student who fails to sit for examination for which he/she registered is deemed to have failed the course.

A student who fails to sit for examination in more than two courses at the end of a given semester shall be deemed not to have registered for the courses in the first place.

a) **Good Standing**

To be in good standing, a student must in each semester have a Cumulative Grade Point Average (CGPA) of not less than 3.00

b) **Withdrawal**

A student whose cumulative grade point average is below 3.00 at the end of two consecutive semesters shall withdraw from the programme.

ii) **Attendance**

In order to be eligible for examination in a particular course, a student shall have attended a minimum of 75% of the total periods of formal instructions delivered for the course.

iii) **Course Evaluation**

In the Masters Programmes, assessment of students' achievements shall be based on:

- Course Examination
- Term papers/Seminars
- Other assignments

iv) **Continuous Assessment**

Continuous assessment shall be done through essays, tests, term papers, tutorial exercises, quizzes and homework.

- Scores from continuous assessment shall constitute 30% of the final marks for courses which are primarily theoretical.

c) **Examinations, Grading Procedure & Results**

i) **Examinations**

- a) In addition to continuous assessment, final examination shall be given for every course at the end of every semester.
- b) The total scores obtainable for every course shall be 100% as follows:

Continuous Assessment	30% - 40%
Final Examination	70% - 60%
Total	100% - 100%

Each course shall normally be completed and examined at the end of the semester in which it is offered.

ii) **Pass Mark**

The minimum pass mark in a course shall be 50%.

iii) **Grading System**

Grading of courses shall be done by a combination of percentage marks and letter grades translated into a graduated system of Grade Point Equivalents (GPE). For the purpose of determining a student's standing at the end of every semester, the Grade Point Average (GPA) system shall be used. The GPA is computed by dividing the total number of credit points (TCP) by the total number of units (TNU) for all the courses taken in the semester. The credit point for a course computed by multiplying the number of units for the course by the Grade Point Equivalent of the marks scored in the course. Each course shall be graded out of a minimum of 100 marks and assigned appropriate Grade Point Equivalent as in the following table:

Credit Units	% Scores	Letter Grades	Grade Points (GP)	Average (GPA)
Vary according to contact hours assigned to each course per week per semester, and according to load carried by students	70 – 100	A	5	Derived by multiplying I and IV and dividing by Total Credit Units
	60 – 69	B	4	
	50 - 59	C	3	
		F	0	

iv) **Presentation of Results**
Results from the Postgraduate School Board of Examiners shall be presented to Senate for approval.

v) **Release of Results**
Results shall be released/published not later than 2 weeks after approval by the Senate.

d) **External Examiner System**
The external examiner system shall be used at the end of the Postgraduate masters programme to assess the courses and thesis.

The thesis shall be subject to oral examination where the student is required to show evidence that he/she carried out the work and had pertinent knowledge of the subject matter.

5.9.3 RESOURCE REQUIREMENT FOR TEACHING AND LEARNING IN THE PROGRAMME

a) **Academic Staff**

i) **Teacher/Student Ratio**
The staff to student ratio for the Postgraduate programme is 1 to 10 for effective teaching and learning.

ii) **Academic Staff Work-Load**
An academic staff shall carry a maximum load of 3 contact hour per week for lecturers and tutorials.

iii) **Staffing**
There should be a minimum of 8 full time staff on ground in a Department. The teacher should have at least an M.Sc. degree with at least three years university teaching experience and rank not lower than Lecturer II.

- b) **Non-Academic Staff**
The services of support staff, which are indispensable in the proper running of the programme as well as for administration, are required. It is important to recruit very competent senior technical staff to maintain teaching and research equipments. Universities should pay attention to optimum proportioning of the non-academic staff to avoid redundancy and overstaffing.
- c) **Computer Literacy**
With the computer age and application of information technology, both academic and non-academic staff should be sufficiently computer literate.
- d) **Student Course Evaluation**
There is a need to have students to evaluate the course at the end of the semester to know how well the course has been delivered and also for the general improvement of the course. The Dean of PG School should set up the modalities for carrying out the evaluation.

5.10 Master of Arts (Industrial Design)

Philosophy

The philosophy of MA Industrial Design Programme is to develop highly skilled professionals with greater competence in industrial design and better understanding of the teaching/learning process.

Providing individuals with specialized advanced knowledge in various aspects of industrial design philosophy.

Aims and Objectives

- To train potential researchers and scholars in the expanding field of industrial design education.
- To produce highly skilled individuals with the capability to advanced knowledge in industrial design field through independent research.
- To meet the demand for highly qualified researcher to serve the needs of higher institutions of learning and growing manufacturing industries in Nigeria.

5.10.1 ADMISSION

- a) **Basic Admission Requirements for Masters Programme**
The criteria for admission into the Master of Arts (Industrial Design programme) will be as follows:
 - i) Matriculation requirement of individual universities which must be 5th level credits including Mathematics and English.
 - ii) Candidates with B.A. Fine Arts/Industrial design with not less than 2nd Class Lower Division from a recognized University.

- iii) Candidates with a PGD at credit level pass (i.e 3.5 of 5.0 scale) or 60% on weighted percentage average.
- b) **Programmes in Masters Degree**
Programmes should be as specified in the individual Universities' prospectus i.e. as available in the University.
- c) **Areas of Specialization**
Candidates can specialize in any of the areas as in the approved programmes of individual Universities.
- d) **Duration of Programme**
- i. A full time Master's Programmes should run for a minimum of 3 semester and a maximum of 4 semesters.
 - ii. Part-time Master's programmes should run for a minimum of 6 semester and a maximum of 8 semesters.
 - iii. For extension beyond the specified maximum period, a special permission of the senate shall be required.
- e) **Requirement of Graduation**
To be awarded a Masters degree candidate must pass a minimum of 24 credit units made up of as follows:
- | | | |
|--------------------------------------|---|----------|
| 17 Core courses of 2 credit units | - | 34 |
| 2 Elective courses of 2 credit units | - | 4 |
| 8 Project courses of 8 units | - | 8 |
| Total | - | 46 units |
- A student shall carry out research in relevant areas of specialization and submit in acceptable theses (six credit units compulsory).
 - A student shall present at least one seminar, submit and defend a thesis proposal.
- f) **Domain of the Masters Programme**
All Masters programmes should be domiciled in the Department/Faculty of the Universities. Institutes and Units should not be permitted to run masters programme.
- g) **Student Enrolment**
Student Enrolment shall be subject to the carrying capacity of the Department/Faculty.

5.10.2 ACADEMIC STANDARDS

A) **Academic Regulations**

i) **Academic Session**

An academic session consists of two semesters. Each semester normally comprises 15 weeks of teaching and two weeks for examinations.

ii) **Modular System**

All Masters programmes shall be run as Course Unit System. All courses should therefore be sub-divided into more or less self-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 or Unit**

Credit are units attached to a course. One credit unit is equivalent to one hour per week per semester of 15 weeks of lectures or tutorials.

Programmes Requirements

i) **Registration Procedure**

Students shall normally complete registration for courses for the semester not later than two weeks after the start of the semester. A student cannot withdraw from a course after seven weeks of lectures in a given semester.

A student who fails to sit for examination for which he/she registered is deemed to have failed the course.

A student who fails to sit for examination in more than two courses at the end of a given semester shall be deemed not to have registered for the course in the first place.

a) **Good Standing**

To be in good standing, a student must in each semester have a cumulative Grade Point Average (CGPA) of not less than 3.00.

b) **Withdrawal**

A student whose cumulative grade point average is below 3.00 at the end of two consecutive semesters shall withdraw from the programme.

ii) **Attendance**

In order to be eligible for examination in a particular course, a student shall have attended a minimum of 75% of the total periods of formal instructions delivered for the course.

iii) **Course Evaluation**

In the Masters Programmes, assessment of students' achievements shall be based on:

- Course Examination
- Term papers/Seminars
- Other assignments.

iv) **Continuous Assessment**

Continuous assessment shall be done through essays, tests, term papers, tutorial exercises, quizzes and homework.

- Scores from continuous assessment shall constitute 30% of the final marks for courses which are primarily theoretical.

c) **Examinations, Grading Procedure and Results**

i) **Examinations**

a) In addition to continuous assessment, final examination shall be given for every course at the end of every semester.

b) The total scores obtainable for every course shall be 100% as follows:

Continuous Assessment	30%	-	40%
Final Examination	70%	-	60%
Total	100%	-	100%

Each course shall normally be completed and examined at the end of the semester in which it is offered.

ii) **Pass Mark**

The minimum pass mark in a course shall be 50%.

iii) **Grading System**

Grading of courses shall be done by a combination of percentage marks and letter grades translated into a graduated system of Grade point Equivalents (GPE). For the purpose of determining a student's standing at the end of every semester, the Grade Point Average (GPA) system shall be used. The GPA is computed by dividing the total number of credit points (TCP) by the total number of units (TNU) for all the courses taken in the semester. The credit point for a course computed by multiplying the number of units for the course by the Grade Point Equivalent of the marks scored in the course. Each course shall be graded out of a minimum of 100 marks and assigned appropriate Grade Point Equivalent as in the following table:

Credit Units	% Scores	Letter Grades	Grade Points (GP)	Average (GPA)
Vary according to contact hours assigned to each course per week per semester, and according to load carried by students	70 – 100	A	5	Derived by multiplying I and IV and dividing by Total Credit Units
	60 – 69	B	4	
	50 - 59	C	3	
		F	0	

iv) **Presentation of Results**

Results from the Postgraduate School Board of Examiners shall be presented to Senate for approval.

v) **Release of Results**

Results shall be released/published not later than 2 weeks after approval by the Senate.

d) **External Examiner System**

The External Examiner System shall be used at the end of the Masters programme to assess the courses and thesis.

The thesis shall be subject to oral examination where the student is required to show evidence that he/she carried out the work and had pertinent knowledge of the subject matter.

5.10.3 RESOURCE REQUIREMENT FOR TEACHING AND LEARNING IN THE PROGRAMME

a) **Academic Staff**

i) **Teacher/Student Ratio**

The staff to student ratio for the Postgraduate programme is 1 to 10 for effective teaching and learning.

ii) **Academic Staff Work-Load**

An academic staff shall carry a maximum load of 3 contact hour per week for lecturers and tutorials.

iii) **Staff**

There should be a minimum of 8 full time staff on ground in a Department. The teacher should have at least an M.Sc. degree with at least three years university teaching experience and rank not lower than Lecturer II.

b) **Non-Academic Staff**

The services of support staff, which are indispensable in the proper running of the programme as well as for administration are required. It is important to recruit every competent senior technical staff to maintain teaching and research equipments. Universities should pay attention to optimum proportioning of the non-academic staff to avoid redundancy and overstaffing.

c) **Computer Literacy**

With the computer age and application of Information Technology, both academic and non-academic staff should be sufficiently computer literate.

d) **Student Course Evaluation**

There is a need to have students to evaluate the course at the end of the semester to know how well the course has been delivered and also for the general improvement of the course. The Dean of PG School should set up the modalities for carrying out the evaluation.

5.11 Master of Science (Industrial Design) Glass Technology

Philosophy

The philosophy of the M.Sc. (Industrial Design) glass technology is to develop highly skilled professional individual in furnace, glass melting studio practice, experimental technology and scientific research method in glass technology.

Aims and Objectives

- To produce highly skilled individuals with the capability to advance knowledge in glass technology through independent research.
- To produce individuals with specialized advanced knowledge in various aspects of glass technology philosophy.

5.11.1 ADMISSION

a) **Basic Admission Requirements for Masters Programme**

The criteria for admission into the M.Sc. (Industrial Design) Glass Technology programme will be as follows:

- i) Matriculation requirement of individual universities which must be 5 'O' level credits including Mathematics and English.
- ii) Candidates with B. Sc. (Industrial Design) Glass Technology 2nd Class Lower Division from an approved University.
- iii) Candidates with a PGD at credit level pass (i.e. 3.5 on a 5 point scale) or 60% on weighted percentage average.

b) **Programmes in Masters Degree**

Programmes should be as specified in the individual Universities' prospectus i.e. as available in the University.

c) **Areas of Specialisation**

Candidates can specialize in any of the areas as in the approved programmes of individual Universities.

d) **Duration of Programme**

- i) A full time Master's Programme should run for a minimum of 3 semesters and a maximum of 8 semesters.
- ii) Part-time master's programmes should run for a minimum of 6 semesters and a maximum of 8 semesters.
- iii) For extension beyond the specified maximum period, a special permission of the Senate shall be required.

e) **Requirement of Graduation**

To be awarded a Masters degree candidate must pass a minimum of 24 credit units made up of as follows:

17 Core courses of 2 credit units	-	34
2 Elective courses of 2 credit units	-	4
8 project course of 8 units	-	8
Total	=	46 units

- A student shall carry out research in relevant areas of specialization and submit an acceptable thesis (six credit units compulsory).
- A student shall present at least one seminar, submit and defend a thesis proposal.

f) **Domain of the Masters Programme**

All Masters programmes should be domiciled in the Department/Faculty of the Universities. Institutes and Units should not be permitted to run masters programme.

g) **Student Enrolment**

Student Enrolment shall be subject to the carrying capacity of the Department/Faculty.

5.11. 2 ACADEMIC STANDARDS

A) **Academic Regulations**

i) **Academic Session**

An academic session consists of two semesters. Each semester normally comprises 15 weeks of teaching and two weeks for examinations.

ii) **Modular System**

All Masters programmes shall be run as Course Unit System. All courses should therefore be sub-divided into more or less self-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 or Unit**
Credit are units attached to a course. One credit unit is equivalent to one hour per week per semester of 15 weeks of lectures or tutorials.
- B) **Programmes Requirements**
- i) **Registration Procedure**
Students shall normally complete registration for courses for the semester not later than two weeks after the start of the semester. A student cannot withdraw from a course after seven weeks of lectures in a given semester.
- A student who fails to sit for examination for which he/she registered is deemed to have failed the course.
- A student who fails to sit for an examination in more than two courses at the end of a given semester shall be deemed not to have registered for those courses in the first place.
- a) **Good Standing**
To be in good standing, a student must in each semester have a cumulative Grade Point Average (CGPA) of not less than 3.00.
- b) **Withdrawal**
A student whose cumulative grade point average is below 3.00 at the end of two consecutive semesters shall withdraw from the programme.
- ii) **Attendance**
In order to be eligible for examination in a particular course, a student shall have attended a minimum of 75% of the total periods of formal instructions delivered for the course.
- iii) **Course Evaluation**
In the Masters Programmes, assessment of students' achievements shall be based on:
- Course Examination
 - Term papers/Seminars
 - Other assignments.
- iv) **Continuous Assessment**
Continuous assessment shall be done through essays, tests, term papers, tutorial exercises, quizzes and homework.
- Scores from continuous assessment shall constitute 30% of the final marks for courses which are primarily theoretical.

c) **Examinations, Grading Procedure and Results**

i) **Examinations**

- a) In addition to continuous assessment, final examination shall be given for every course at the end of every semester.
- b) The total scores obtainable for every course shall be 100% as follows:

Continuous Assessment	30%	-	40%
Final Examination	70%	-	60%
Total	100%	-	100%

Each course shall normally be completed and examined at the end of the semester in which it is offered.

ii) **Pass Mark**

The minimum pass mark in a course shall be 50%.

iii) **Grading System**

Grading of courses shall be done by a combination of percentage marks and letter grades translated into a graduated system of Grade point Equivalents (GPE). For the purpose of determining a student's standing at the end of every semester, the Grade Point Average (GPA) system shall be used. The GPA is computed by dividing the total number of credit points (TCP) by the total number of units (TNU) for all the courses taken in the semester. The credit point for a course computed by multiplying the number of units for the course by the Grade Point Equivalent of the marks scored in the course. Each course shall be graded out of a minimum of 100 marks and assigned appropriate Grade Point Equivalent as in the following table:

Credit Units	% Scores	Letter Grades	Grade Points (GP)	Average (GPA)
Vary according to contact hours assigned to each course per week per semester, and according to load carried by students	70 – 100	A	5	Derived by multiplying I and IV and dividing by Total Credit Units
	60 – 69	B	4	
	50 - 59	C	3	
		F	0	

iv) **Presentation of Results**

Results from the Postgraduate School Board of Examiners shall be presented to Senate for approval.

v) **Release of Results**

Results shall be released/published not later than 2 weeks after approval by the Senate.

d) **External Examiner System**

The External Examiner System shall be used at the end of the Masters programme to assess the courses and thesis.

The thesis shall be subject to oral examination where the student is required to show evidence that he/she carried out the work and had pertinent knowledge of the subject matter.

5.11.3 RESOURCE REQUIREMENT FOR TEACHING AND LEARNING IN THE PROGRAMME

a) **Academic Staff**

i. **Teacher/Student Ratio**

The staff to student ration for the Postgraduate programme shall be 1 to 10 for effective teaching and learning.

ii. **Academic Staff Work-Load**

An academic staff shall carry a maximum load of 3 contact hours per week for lectures and tutorials.

iii. **Staffing**

There should be a minimum of 8 full time staff on ground in a Department. The teacher should have at least an M.Sc. degree with at least three years university teaching experience and rank not lower than Lecturer II.

b) **Non-Academic Staff**

The services of support staff, which are indispensable in the proper running of the programme as well as for administration, are required. It is important to recruit very competent senior technical staff to maintain teaching and research equipments. Universities should pay attention to optimum proportioning of the non-academic staff to avoid redundancy and overstaffing.

c) **Computer Literacy**

With the computer age and application of information technology, both academic and non-academic staff should be sufficiently computer literate.

d) **Student Course Evaluation**

There is a need to have students to evaluate the course at the end of the semester to know how well the course has been delivered and also for the general improvement of the course. The Dean of PG School should set up the modalities for carrying out the evaluation.

5.12 Courses on Offer at Postgraduate Level and their Synopses

Postgraduate Diploma Courses

Course Code	Title	L	T	P	U	
	Project	0	0	6	4	C
	Research Methods	2	1	0	3	C
	History of Design (all option)	2	0	-	2	C
	Material Science & Technology	2	0	-	3	C
	Advanced Design Studio (all options)	2	1	6	3	C
	Aesthetics of Designs	2	1	-	3	C
	Computer Studies	2	1	4	2	C
	Seminar	0	0	0	2	C
	Total				24	

- Student may take elective according to available courses.
- Two code nomenclatures are recommended FAA – Fine & applied Arts or FID – Fine and Industrial Design.

5.12.1 SUMMARY OF COURSE SYNOPSES FOR PGD

General Drawing

Knowledge of advanced drawing skills to handle life and nature form subjects. Dimensional drawing for technical renderings. Basic concepts of technical drawing.

Research Methods

Intermediate knowledge of types of research, techniques of data collection, analytic skills and presentational approaches of both studio and theoretical research. How to problematize issues in the visual arts books and exhibition review.

History of Design

The origin and chronological development of design in the various studio options and implication on design history. A designer must know where he/she is coming from to enable the designer have the right compass for the future.

Material Science and Technology

This entails studies in the physical/chemical properties of art media and how their impact on theories, techniques and other adaptive function is. Experiments with local materials are encourages.

Studio Practice & Design

These series of courses explore in a rigorous manner the intricacies of the practice of the various sub-disciplines of the visual and industrial art. It involves intense and long hours of studio activities.

Aesthetics of Design

Theories and principles of critical analyses, skills for appraising and interpreting visual forms. Art judgmental criteria including methods of evaluation and measurement of aesthetics worth.

Computer Studies for Visual Arts

Computer packages for use by visual artists in the various sub-disciplines Corel draw, Page maker, Point box, basic statistical packages. Digital imaging manipulations.

Seminar

A seminar presentation on a topic related to the students preferred option. It must be seen to address a pragmatic issue.

5.12.2 M.Sc.; M.Tech and MA Industrial or Fine & Applied Arts Courses

	Code	Course Title	L	T	P	U
1st Semester		Drawing for Industrial Design or Advanced General Drawing	0	1	6	3
		Critical Studies in Art	2	1	0	3
		History of World Art Survey	2	1	0	3
		Material Science Technology	2	1	0	3
		Studio Practice (all options)	2	2	6	6
		Entrepreneurial Studies (e.g. Textile Management)	2	1	0	3
		History of Design (all options)	2	2	0	3
2nd Semester		Total				24
		Material Science II	2	1	0	3
		Studio Practice II	2	2	6	6
		Seminar	0	0	0	3
		Studio Practice III	2	0	0	6
		Computer Studies	2	-	4	2
		Research Project/Dissertation	0	0	6	6
		Research Project Continues	0	0	0	6
		Total				26

5.12.3 Course for MFA Fine & Applied Arts

	Code	Course Title	L	T	P	U
1st Semester		Graduate General Drawing	0	2	6	6
		Material Science/Technology	2	1	4	4
		Graduate Studio Practice	2	2	6	4
		Entrepreneurial Studies	2	1	-	3
2nd Semester		Total				17
		Studio Practice II	2	2	6	4
		Material Science/Technology II	2	1	6	4
		Elective	2	0	0	5
		Special Project	0	0	0	20
	Total				50	

5.12.4 SUMMARY OF COURSE REQUIREMENT FOR MA; ART HISTORY

	Code	Course Title	L	T	P	U
1 st Semester		Research Methods in Art History	2	1	0	3
		Critical Studies in Art or Art Criticism (c)	2	1	0	3
		World art History Survey Prehistory-Renaissance (c)	2	1	0	3
		Twentieth Century Art and Architecture	2	1	0	3
		African Art: Typology, Function and Aesthetics	2	1	0	3
		Studies in Iconography	2	1	0	2
		Pre-Colonial Nigerian Art	2	1	0	3
		Nigerian Art in the Colonial Period	2	1	0	3
2 nd Semester		Total				24
		Modern Nigerian Art in the Post Colonial Period	2	1	0	3
		African Art 20 th – 21 st Centuries	2	1	0	3
		Theories in Modern African Art	2	1	0	3
		Graduate Art History Seminar	0	0	0	2
		Computer Digital Image Generation and Use	2	1	4	2
		Dissertation	0	0	0	6
		Total				19

5.13 Master Art Education

Each Masters of Art Education candidate must offer a total of 24 units of course work from the following:-

Theories of Art in Art Education

The various meaning perception and roles of art in human cognition are examined. Human development as it affects the earning process and the learning process and the mechanics of art in it will be examined.

Research Methods in Art Education

Education research methods, specific procedures for types of art education research are evaluated for what they are. Evaluation of art education researches by objectives, techniques and methods.

Aesthetic Education

Education artists' vision via talking seeing and thinking visually forms the foundation of this course. Theories of aesthetic education.

History of Art Education

The origin and chronological development of art education in Europe, America. Its parallel in pre-colonial Africa through the modern to present day Nigeria. Features of the evolutionary phases of art Education in Nigeria.

Art Education Curriculum & Instruction

Art and curriculum design theories and principles. Special needs of studio art teaching. Art curriculum and stated educational/cultural policy. The policy needs and art curriculum. The role of internship in curriculum delivery. Curricular implementation and teachers inspection.

Philosophy of Art Education

An historical Examination of the extant rationale for the justification of art philosophy. Notable scholars in the field shall be studied.

Art Education Seminar

Candidates with the assistance of their supervisor shall select a topic to be research upon out of which a departmental presentation must be based. Empirical studies are preferred.

Candidates for Art Education will be required to take 6 units of one studio course at MFA level.

Art Education Dissertation

As requirement for award of the M.A Degree a candidate is to submit an original deeply research dissertation on a viable issue in art education. Experimental researches are preferred.

5.14 COURSE SYNOPSES FOR M.Sc, M.Tech AND MFA IN INDUSTRIAL DESIGN OR FINE AND APPLIED ARTS

Drawing for Industrial Design or Advanced General, Drawing

Drawing and their generation for the various specializations will be dealt with. Thumbnails, renderings and cartoons as guide for studio projects. Technical drawing, stressing dimensional, cross sectional and specifications will be learnt according to the needs of the industrial design options. The second part will stress true to life and nature draughtmanship for the fine art options. The use of computers for this purpose is desirable.

Aesthetics of Design

More involved and expansive theories and principles of critical analysis in appraising, evaluating and interpretation of art forms will be engaged. Aesthetic theories and judgmental criteria from a multi-cultural perspective are encouraged.

Survey History of World Art

A survey of major periods of world art history beginning from the prehistoric through the Renaissance to the 21st Century. The emphasis is to draw attention to commonalities of thought and peculiarities across time. However, emphasis should be on the place of the art of Africa in the entire matrix.

Material Science Technology

Research studies in theory and practice in the chemical and physical properties of conventional and innovative medial for art production. It could bother on the impact of

adaptation, synthesis and environmental conditions on materials. It will also involve restoration techniques. Prerequisite to Material Science II.

Studio Practice (in Various Studio Option)

The principles and practice of studio art in the candidates chosen area with the aim of attaining mastery of the said area. The content of this course will therefore, vary and are listed. The code could be expanded or one option could be differentiated with letters a,b,c,d etc. Also applicable to Studio Practice II

Entrepreneurial Studies

This series of courses could be variously named according to the option. E.G. Textile Management and Merchandising, Art Studio Management. Art and Design Patronage and Marketing. Project proposal writing, costing, contracts and copyright matters.

History of Design (All Options)

The history of design in the various specialization areas such as painting, textiles, graphics, ceramics, jewellery etc. The origin of significant designs and their historical development in the above areas will be explored. The idea is for our present practice to be guided by the extant pool of experiences.

Seminar Papers

Each student is required with the assistance of her/his supervisor to choose a topic on which to present a seminar paper.

Computer Studies

Basic computer appreciation. Exposure to basic programmes and specific packages which are useful in the students stress area, experience for our present and future efforts.

5.15 MA Art History

Research Method in Art History

Art historical research defined. Types of research methods of art historical research; conceptual frameworks. Data collection and analysis, style and form of research report presentation. Genres of research methods, formalism, deconstruction, feminism, biography/autobiography, iconography / iconological studies etc.

Critical Studies in Art or Art Criticism

Methods and theories of critical analysis. Art criticism, approaches, goal and roles in visual culture studies. Taste preferences, sign-symbol issues in the experimental world. Aesthetic models, formal evaluation interpretation and critical reading.

Survey History of World Art

The survey of the entire history of world art from the prehistoric era to the 21st century. The stress is to note the origin, evolutionary, any development of the world of images, shared visual thoughts and differences as extant pool to be emphasized. Major architectural developments of the 20th and 21st centuries in Western Europe, America and Africa. Emphasis is on form, topology, function and aesthetics.

African Art, Typology, Function and Aesthetics

African art; Definition, Typology and classificatory criteria. Stylistic analyses by morphology, function and context of preference using extant case studies. Origin response to African art and the dialogue of culture contract in the visual art history. Emergent concepts, theories and problems.

Studies in Iconography/Iconology

Western Education, patriotism and Nigerian art after Independence Schools of Art. Western trained artists and the art of national identity. Workshop Schools and Art School.

Meaning in the visual arts with emphasis on African arts. Denotation, connotation, symbolic thought, semiotics and visual perception. Modes of thought; Cultural history and cognition.

Nigerian Art History form Pre-colonial To Present Day in the Colonial Period 1800-1960

Nigeria's diverse art forms/objects before foreign present. style, context and iconography of selected samples from diverse ethnic groups.

The nature of art in the colonial period style geography in selected media. Synchronic study and dating of art of this period. Characteristics of the arts of different Nigerian groups.

Graduate Art History Seminar

A seminar presentation on any topic in art history, following the art historical presentation format. The issue addressed must have potential to contribute to knowledge.

5.16 DOCTORATE PROGRAMMES

1. Ph.D (Art Education)
2. Ph.D (Art History)
3. Ph.D (Industrial Design)

5.16.1 DOCTOR OF PHILOSOPHY (Ph.D) ART EDUCATION

Philosophy

The philosophy of the doctoral programme in Art Education is to develop highly skilled knowledgeable art educators and well rounded intellectuals for academic development. It is a sensitization of teachers of art to recognize the value of art and art education as a vehicle for education aesthetic, cultural and technological development. the programme is to develop highly skilled professional art educators who are prepared to meet the need of the nation and international market.

Aim and Objectives

- The general aim of the programme is to produce knowledgeable, reflective, active, art educators who have the intellectual capabilities to contribute meaningfully to art development.

- To provide students with knowledge of content; who are knowledgeable about the art subject; who understand and promote the value of art in contemporary cultures and who are active in the professional, cultural, and art communities.
- To provide students with the knowledge of pedagogy; who think systematically about the art of teaching, in meaningful and critical ways; who consider teaching to be a dynamic and continuing process of development and growth; and who understand and are prepared to utilize current technology and media in the public school art programs.
- To provide student with the knowledge of the teachers; who recognize and respect individual differences to the students and adopt their teaching strategies to fit individual student needs.
- To produce individuals who will be professionals who are self-motivated and highly organized, willing to develop and exceptionally strong theoretical basis, for their work, and who can adopt their skills to changing audience and contexts.

5.16.2 ADMISSION

a) **Basic Admission Requirements for Doctoral Programme**

- i. All candidates must have five credit passes including English, Mathematics and one science subject at 'O' Level.
- ii. Candidates with an M.A. Art education degree with a CGPA of at least 3.5 of a 5.0 point scale or 60% weighted average.
- iii. All candidates must demonstrate adequate intellectual capacity, maturity and effective decision making and problem solving potentials possibly through a selection process.

b) **Doctor of Philosophy (Ph.D) Programmes**

Programmes should be as specific in the individual Universities prospectus i.e. as available in the University.

c) **Area of Specialization**

Candidates can specialize in any of the areas of interest as in the approved programmes of individual Universities.

d) **Duration of Programmes**

- i. A full time Doctoral programme shall run for a minimum of 6 semesters and a maximum of 10 semesters.
- ii. Part-time Doctoral programmes shall run for a minimum of 8 semesters and a maximum of 12 semesters.

- iii. for extension beyond the specified maximum period, a special permission of the Postgraduate Board shall be required.
- e) **Requirement for Graduation**
Doctorate (Ph.D) programmes should primarily be by Research. However, Departmental Postgraduate Committee may prescribe some courses of not more than 12 credit Units to be taken by the candidates. A Doctoral (Ph.D)/Thesis of 12 credit unit must be defended (compulsory) before a Panel of Examiners.
- f) **Domain of the Doctoral Programme**
The Doctoral programmes shall be domiciled in the relevant Department.
- g) **Student Enrolment**
Student Enrolment shall be subject to the carrying capacity of the Department and more importantly the availability of qualified Supervisors who must themselves possess a Doctoral (Ph.D) degree.

5.16.3 ACADEMIC STANDARDS

- a) **Academic Regulations**
 - i) **Academic Regulation**
An academic session consists of two semesters. Each semester normally comprises 15 weeks of teaching and two weeks for examination.
 - ii. All doctoral Programmes shall be run as Course Unit System. All courses should therefore be sub-divided into more or less self-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. Credits are unit weights attached to a course. One credit unit is equivalent to:
 - One hour per week per semester of 15 weeks of lectures
 - two hours per week per semester of 15 weeks tutorial
 - three to five hours per week of 15 laboratory/field work/studio.
- b) **Programmes Requirements**
 - i) **Registration Procedure**
Students shall normally complete registration for course for the semester not later than two weeks after the start of the semester. A student cannot withdraw from a course after seven weeks of lectures in a given semester without permission from the Dean of Postgraduate School.

A student who fails to sit for examination in more than two courses at the end a given semester shall be deemed not to have registered for those courses in the first place.

ii) **Credit Transfer (for PhD by Coursework and Research)**

A Ph.D Student who obtained his Masters degree from the same University or other recognized Universities may be allowed to transfer 24 credits from the masters programme into the PhD programme provided the courses were passed with a B minimum grade.

i) **Good Standing**

To be in good standing, a student must in each semester have a Cumulative Grade Point Average (CGPA) of not less than 3.5.

ii) **Withdrawal**

A student whose Cumulative Grade Point Average is below 3.5 at the end of two consecutive semesters shall withdraw from the programme.

c) **Attendance**

In order to be eligible for examination in a particular course, a student shall have attended a minimum of 75% of the total periods of formal instructions delivered for the course.

d) **Course Evaluation**

In the doctoral Programmes, assessment of students achievement should be based on:

- i) Course Examination;
- ii) Term papers/Research Seminars;
- iii) Other assignments.

e) **Examinations, Grading Procedure & Results**

i) **Examinations**

In addition to continuous assessment, final examination shall be given for every course at the end of every semester.

The Total scores obtainable for every course shall be 100% as follows:

Continuous Assessment	30%	-	40%
Final Examination	70%	-	60%
Total	100%	-	100%

ii) **Pass Mark**

The minimum pass mark in any course and thesis shall be 50% and 60% respectively.

iii) **Grading System**

Grading of courses shall be done by a combination of percentage marks and letter grades translated into a graduated system of Grade Point Equivalent (GPE). For the purpose of determining a student's standing at the end of every semester, the Grade Point Average (GPA) system shall be used. the GPA is computed by dividing the total number of credit point (TCP) by the total number of unit (TNU) for all the course taken in the semester. the credit point for a course computed by multiplying the number of units of r the course by the Grade Point Equivalent of the marks scored in the course. Each course shall be graded out of a minimum of 100 marks and assigned appropriate Grade Point Equivalent as in the following table:

Credit Units	Scores	Letter Grades	Grade Point (GP)
Vary according to contact hours assigned to each course per week per semester, and according to load carried by students	70 – 100	A	5
	60 – 69	B	4
	50 – 59	C	3
	0 - 49	F	0

iii **Presentation of Results**

Results from the Postgraduate School Board of Examiners shall be presented to Senate for approval.

iv. **Release of Results**

Results shall be release/published not later than 2 weeks after approval by the Senate.

Note: Items b-e as listed above should be adopted as contained in the individual Universities regulations for all Doctoral (Ph.D) programmes

e) **External Examiner System**

The external examiner system shall be used at the end of the Doctoral programme to assess the thesis.

The candidate shall be required to defend the thesis orally (viva Voce) before a panel of Internal and External Examiners.

5.16.4 RESOURCES REQUIREMENT FOR TEACHING AND LEARNING IN THE PROGRAMME

a) **Academic Staff**

i) **Teacher/Student Ratio**

The staff to student ratio for the Ph.D programme shall be 1:10 for effective teaching and learning.

ii) **Academic Staff Work-Load**

An academic staff shall carry a work load not exceeding the maximum prescribed by the School of Postgraduate Studies and Senate of each university.

iii) **Staffing**

There should be a minimum of 8 full time staff on the ground in a Department.

iv) **Supervision & Teaching**
Holders of Ph.D Degree with a minimum Postdoctoral experience of not less than three years may teach in the Ph.D programme. However, only holders of Ph.D degree of a rank not lower than senior lecturer may supervise a doctoral thesis

b) **Non-Academic Staff**

The services of support staff, which are indispensable in the proper running of the programme as well as for administration, are required. It is important to recruit very competent senior technical staff to maintain teaching and research equipment. Universities should pay attention to optimum proportioning of the non-academic staff to avoid redundancy and overstaffing.

c) **Computer Literacy**

With the computer age and application of information technology, both academic and non-academic staff should be sufficiently computer literate.

5.17 DOCTOR OF PHILOSOPHY (Ph.D) ART HISTORY

Philosophy

The philosophy of the doctoral programmes in art history is to develop highly skilled art historians who will acquire greater competence in art and aesthetics with better understanding of teaching/learning process, abilities for research in the field of art and culture. The programme therefore develop through research.

Aims and Objectives

- To provide students with knowledge with necessary competencies in art history to be able to assure broader responsibilities and challenges in the society.
- To produce needed research personnel for indepth study and development of local or traditional art and culture, cultural heritage, linking it with science and technology.

5.17.1 ADMISSION

a) **Basic Admission Requirements for Doctoral Programme**

- i. All candidates must have five credit passes including English, Mathematics and one science subject at 'O' Level.
- ii. Candidates with an M.Sc. degree with a CGPA of at least 3.5 on a 5 point scale or 60% weighted average.
- iii. All candidates must demonstrate adequate intellectual capacity, maturity and effective decision making and problem solving potentials possibly through a selection process.

- b) **Doctor of Philosophy (Ph.D) Programme**
The PhD programme should be as specified in the individual Universities prospectus i.e as available in the University.
- c) **Areas of Specialization**
Candidates can specialize in any of the areas of interest as in the approved programmes of individual Universities.
- d) **Duration of Programme**
i. A full time Doctoral programme shall run for a minimum of 6 semesters and an maximum of 10 semesters.
ii. Part-time Doctoral programme shall run for a minimum of 8 semesters and maximum of 12 semesters.
iv. For extension beyond the specified maximum period, a special permission of the Postgraduate Board shall be required.
- e) **Requirement of Graduation**
Doctorate (Ph.D) programmes should primarily be by Research. However, Departmental Postgraduate committee may prescribe some courses of not more than 12 credit Units to be taken by the candidates. A Doctoral (Ph.D). Thesis of 12 credit units must be defended (compulsorily) before a panel of Examiners.
- f) **Domain of the Doctoral Programme**
The Doctoral programmes shall be domiciled in the relevant Department.
- g) **Student Enrolment**
Student Enrolment shall be subject to the carrying capacity of the Department and more importantly the availability of qualified Supervisors who must themselves possess a Doctoral (Ph.D) degree.

5.17.2 ACADEMIC STANDARDS

- a) **Academic Regulations**
i) Academic Regulations
An academic session consists of two semesters. Each semester normally comprises 15 weeks of teaching and two weeks for examinations.
ii) All doctoral Programmes shall be run as Course Unit System. All courses should therefore be sub-divided into more or less self-sufficient and logically consistent packages that are taught within a semester and examined at the end of the particular semester. Credit units should be attached to each course.
iii) Credits are unit weights attached to a course. One credit unit is equivalent to:
 - one hour per week per semester of 15 weeks of lectures.
 - two hours per week per semester of 15 weeks tutorial.
 - Three to five hours per week of 15 weeks laboratory/field work/studio.

b) **Programme Requirements**

i) **Registration Procedure**

Students shall normally complete registration for courses for the semester not later than two weeks after the start of the semester. A student cannot withdraw from a course after seven weeks of lectures in a given semester without permission from the Dean of Postgraduate School.

A student who fails to sit for examination in more than two courses at the end of a given semester shall be deemed not to have registered for those courses in the first place.

ii) **Credit Transfer**

A Ph.D student who obtained his Masters degree from the same University or other recognized Universities may be allowed up to 24 credit transfer from the masters programmes provided the courses were passed with a B minimum grade.

i) **Good Standing**

To be in good standing, a student must in each semester have a Cumulative Grade Point Average (CGPA) of not less than 3.5.

ii) **Withdrawal**

A student whose Cumulative Grade Point Average is below 3.50 at the end of two consecutive semesters shall withdraw from the programme.

c) **Attendance**

In order to be eligible for examination in a particular course, a student shall have attended a minimum of 75% of the total periods of formal instructions delivered for the course.

d. **Course Evaluation**

In the doctoral programmes, assessment of students' achievements should be based on:

- i) Course Examination
- ii) Term papers/Research Seminars;
- iii) Other Assignments.

e) **Examinations, Grading Procedure and Results**

i) **Examinations**

In addition to continuous assessment, final examination shall be given for every course at the end of every semester.

The total scores obtainable for every course shall be 100% as follows:

Continuous Assessment	30%	-	40%
Final Examination	70%	-	60%
Total	100%	-	100%

Each course shall normally be completed and examined at the end of the semester in which it is offered.

ii) **Pass Mark**

The minimum pass mark in any course and thesis shall be 50% and 60% respectively.

iii) **Grading System**

Grading of courses shall be done by a combination of percentage marks and letter grades translated into a graduated system of Grade Point Equivalents (GPE). For the purpose of determining a student's standing at the end of every semester, the Grade Point Average (GPA) system shall be used. The GPA is computed by dividing the total number of credit points (TCP) by the total number of units (TNU) for all the courses taken in the semester. The credit point for a course computed by multiplying the number of units for the course shall be grade out of a minimum of 100 marks and assigned appropriate Grade Point Equivalent as in the following table:

Credit Units	Scores	Letter Grades	Grade Points (GP)
Vary according to contact hours assigned to each course per week per semester, and according to load carried by students	70 – 100	A	5
	60 – 69	B	4
	50 – 59	C	3
	9 – 49	F	0

iii) **Presentation of Results**

result from the Postgraduate School Board of Examinations shall be presented to Senate for approval.

iv) **Release of Results**

Results shall be released/published not late than 2 weeks after approval by the Senate.

Note: Items be as listed should be adopted as contained in the individual Universities' regulations for all Doctoral (Ph.D) programmes.

c) **External Examiner System**

The external examiner system shall be used at the end of the Doctoral programme to assess the thesis.

The candidate shall be required to defend the thesis orally (vivaVoce) before a panel of Internal and External Examiners.

5.17.3 RESOURCE REQUIREMENT FOR TEACHING AND LEARNING IN THE PROGRAMME

a) Academic Staff

i) Teacher/Student Ratio

The staff to student ratio for the Ph.D programme shall be 1:10 for effective teaching and learning.

ii) Academic Staff Work-Load

An academic staff shall carry a work load not exceeding the maximum prescribed by NUC.

iii) Staffing

There should be a minimum of 8 full time on ground in a Department.

iv) Supervision and Teaching

Holders of Ph.D Degree with a minimum Postdoctoral experience of not less than three years may teach in the Ph.D programme. However, only holders of Ph.D degree of a rank and not lower than senior lecturer may supervise a doctoral thesis.

b) Non-Academic Staff

The services of support staff, which are indispensable in the proper running of the programme as well as for administration, are required. It is important to recruit very competent senior technical staff to maintain teaching and research equipments. Universities should pay attention to optimum proportioning of the non-academic staff to avoid redundancy and overstaffing.

c) Computer Literacy

With the computer age and application of information technology, both academic and non-academic staff should be sufficiently computer literate.

5.18 DOCTOR OF PHILOSOPHY Ph.D) INDUSTRIAL DESIGN

Philosophy of the doctoral programme in industrial design is to help students acquire greater competence in industrial design and better understanding of teaching/learning process. To develop abilities for research in the field of industrial design and gain depth and breath of knowledge in related academic field.

Aims and Objectives

- To train potential scholars in expanding field of industrial design education and practice in Nigeria.
- Producing highly skilled individuals with the capability to advance knowledge in industrial design field through independent research.
- Providing industrial designers with specialized advanced knowledge in various aspects of industrial design philosophy.

5.18.2 ADMISSION

a) **Basic Admission Requirements for Doctoral Programme**

- i. All candidates must have five credit passes including English, Mathematics and one science subject at 'O' Level.
- ii. Candidates with an M.Sc. degree with a CGPA of at least 3.5 of a 5.0 point scale or 60% weighted average.
- iii. All candidates must demonstrate adequate intellectual capacity, maturity and effective decision making and problem solving potentials possibly through a selection process.

b) **Doctor of Philosophy (Ph.D. Programmes)**

Programmes should be as specified in the individual Universities' prospectus i.e. as available in the University.

c) **Areas of Specialization**

Candidates can specialize in any of the areas of interest as in the approved programmes of individual Universities.

d) **Duration of Programme**

- i) A full time Doctoral programme shall run for a minimum of 6 semesters and a maximum of 10 semesters.
- ii) Part-time Doctoral programmes shall run for a minimum of 8 semesters and a maximum of 12 semesters.
- iii) For extension beyond the specified maximum period, a special permission of the Postgraduate Board shall be required.

e) **Requirement of Graduation**

Doctorate (Ph.D) programmes should primarily be by Research. However, the Departmental Postgraduate Committee may prescribe some courses of not more than 12 credit Units to be taken by the candidates. A Doctoral (Ph.D). Thesis of 12 credit units must be defended (compulsory) before a Panel of Examiners.

f) **Domain of the Doctoral Programme**

The Doctoral programmes shall be domiciled in the relevant Department.

g) **Student Enrolment**

Student Enrolments shall be subject to the carrying capacity of the Department and more importantly the availability of qualified Supervisors who must themselves possess a Doctoral (Ph.D) degree.

5.18.3 ACADEMIC STANDARDS

a) **Academic Regulations**

i) **Academic Regulation**

An academic session consists of two semesters. Each semester normally comprises 15 weeks of teaching and two weeks for examinations.

ii) All doctoral programs shall be run as Course Unit System. All courses should therefore be sub-divided into more or less self-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) Credits are units weights attached to a course. One credit unit is equivalent to:

- one hour per week per semester of 15 weeks of lectures.
- Two hours per week per semester of 15 weeks tutorial
- Three to five hours per week of 15 weeks laboratory/filed work/studio

b) **Programmes Requirements**

i) **Registration Procedure**

Students shall normally complete registration for course for the semester not later than two weeks after the start of the semester. A student cannot withdraw from a course after seven weeks of lectures in a given semester without permission from the Dean of Postgraduate School.

A student who fails to sit for examination for which he/she courses registered is deemed to have failed the course.

A student who fails to sit for examination in more than two courses at the end of a given semester shall be deemed not to have registered for those courses in the first place.

ii) **Credit Transfer**

A Ph.D student who obtained his Masters degree from the same University or other recognized Universities may be allowed up to 24 credit transfer from the masters programme provided the course were passed a B minimum grade.

i) **Good Standing**

to be in good standing, a student must in each semester have a Cumulative Grade Point Average (CGPA) of not less than 3.50.

ii) **Withdrawal**

A student whose cumulative grade point average is below 3.50 at the end of two consecutive semesters shall withdraw from the programme.

c) **Attendance**

In order to be eligible for examination in a particular course, a student shall have attended a minimum of 75% of the total periods of formal instructions delivered for the course.

d) **Course Evaluation**

In the doctoral Programmes, assessment of student's achievements shall be based on:

- Course Examination
- Term Papers/Seminars;
- Other assignments.

e) **Examinations, Grading Procedure & Results**

i) **Examination**

In addition to continuous assessment, final examination shall be given for every course at the end of every semester.

The total scores obtainable for every course shall be 100% as follows:

Continuous Assessment	30% - 40%
Final Examination	70% - 60%
Total	100% - 100%

Each course shall normally be completed and examined at the end of the semester in which it is offered.

ii) **Pass Mark**

The minimum pass mark in any course shall be 50% and 60% respectively.

iii) **Grading System**

Grading of courses shall be done by a combination of percentage marks and letter grades translated into a graduated system of Grade Point Equivalents (GPE). For the purpose of determining a student's standing at the end of every semester, the Grade Point Average (GPA) system shall be used. The GPA is computed by dividing the total number of credit points (TCP) by the total number of units (TNU) for all the courses taken in the semester. The credit point for a course computed by multiplying the number of units for the course by the Grade Point Equivalent of the marks scored in the course. Each course shall be graded out of a minimum of 100 marks and assigned appropriate Grade Point Equivalent as in the following table:

Credit Units	Scores	Letter Grades	Grade Points (GP)
Vary according to contact hours assigned to each course per week per semester, and according to load carried by students.	70-100	A	5
	60-69	B	4
	50-59	C	3
		F	0

- vi) **Presentations of Results.**
Results from the Postgraduate School Board of Examiners shall be presented to Senate for approval.
- vii) **Release of Results**
Results shall be released/published not later than 2 weeks after approval by the Senate.

Note: Items be as listed above listed above should be adopted as contained in the individual Universities' regulations for all Doctoral (Ph.D) programmes.

- f) **External Examiner System**
The external examiner system shall be used at the end of the programme to assess the thesis.

The candidate shall be required to defend the thesis orally (vivaVoce) before a panel of Internal and External Examiners.

5.18.4 RESOURCE REQUIREMENT FOR TEACHING AND LEARNING IN THE PROGRAMME

- a) **Academic Staff**
 - i) **Teacher/Student Ratio**
The staff to student ratio for the Ph.D Programme shall be 1:10 for effective teaching and learning.
 - ii) **Academic Staff Work-Load**
An Academic staff shall carry a work load not exceeding the maximum prescribed by NUC.
 - iii) **Staffing**
There should be a minimum of 8 full time staff on ground in a Department.
 - iv) **Supervision & Teaching**
Holders of Ph.D Degree with a minimum Postdoctoral experience of not less than three years may teach in the Ph.D programme. However, only holders of Ph.D degree of a rank and not lower than senior lecturer may supervise a doctoral thesis.
- b) **Non-Academic Staff**
The services of support staff, which are indispensable in the proper running of the programme as well as for administration are required. It is important to recruit very competent senior technical staff to maintain teaching and research equipments. Universities should pay attention to optimum proportioning of the non-academic staff to avoid redundancy and overstaffing.

c) **Computer Literacy**

With the computer age and application of information technology, both academic and non-academic staff should be sufficiently computer literate.

5.19 Course Outline

Courses for Ph.D in Studio

Code	Title	L	T	P	U
	Studio Research Methods	2	1	0	3
	Advanced Studio Seminar	2	1	0	6
	Thesis	0	0	0	12
	Graduate Material Science/Technology	2	1	0	3
	Graduate Critical Studies and Writing on Art				3
	Total	6	3	0	24

Candidates are to offer courses from the under listed in conformity with their stress areas and to make up for the general requirements of the Ph.D unit stipulations.

5.20 Course Synopses (Ph.D.) in Studio

Studio Research Methods

The nature and type of Studio Art research will be discussed. Research designs and statistics for Data Analysis, Study in Data organization and presentation will be undertaken. Studio Research reports/papers. Exploratory and Semi-Experimental Research will also be studied.

Advanced Studio Seminar

An advanced studio seminar on aspects of current research or art any studio practice based topics must be presented. Preferably it should emanate from the research interests of the candidate. Two of such presentations will be required for graduation.

Thesis

Thesis on any studio based topic from art research or practice on that of accomplished studio master. The thesis will be accompanied with an exhibition which will convincingly support the research findings. The thesis must emanate from the very studio option or the doctoral candidate.

Graduate Material Science / Technology (all options)

Advanced Studies in the materials and methods of painting. There will be collaboration with relevant departments in the University, manufacturing companies and research outfits. Pigments, fabric, grounds, non-paint but painting friendly materials will be studied. This is now it will be studied in textiles, ceramics, metal smithing, Sculpture, Visual Communication design etc.

Graduate Critical Studies and Writing on Art.

Discourse on modern critical analytic paradigms. Post structuralism and visual culture versus classical aesthetic theories will be discussed. Students will be exposed to critical writing in visual arts via; studio and art historical papers, reviews and reports.

Critical discourse will center on the sign-symbol relation, modes of thought and the science of experience. The philosophy of taste, description, interpretation, evaluation and critical reading will be interrogated. Critical discourses of notable leaders in the field such as Diderot, Jacques Derrida, Arnold Hauser, will be studied.

5.21 Course Outline

Ph.D. Art History Courses.

CODE	TITLE	L	T	P	U
	Advanced Art History Methods (C)				3
	Advanced Critical Studies & Writing on Art (C)				3
	Advanced Art History Seminar (R)				3
	Curatorship & Art Business (C)				3
	Arts and heritage Management (E)				3
	Advanced Art History Seminar 1 ®				3
	Special Readings in Contemporary Art (E)				3
	Thesis (C)				12
	Total				27

5.22 Course Synopses (Ph.D. Art Historys)

Advanced Art History Methods

Now image technologies and traditional analytic frames, Art history methods and postmodernism. Art history methodological paradigms/perspectives in the 21st century. Documentary evidence and field work in art historical approach, Art Collectors, marketers and art scholars, Semiotics, phenomenology Deconstruction, Psychoanalysis, Style geography, typologies and serialization. Visual culture and the limits of synchronic studies, Icon digitalism-images, new image making, technologies and new media; implications for art historical research.

Advanced Critical Studies and Writing on Art

Modern critical analytic paradigms, Formalism, Visual Culture versus classical aesthetic theories. Presenting the visual arts; studio and art historical papers. The sign-symbol relation, modes of thought and the science of Experience Philosophy of taster. Description, interpretation, evaluation and critical reading, Critical discourses of notable leaders in the field such as Diderot, Jacques Derrida, Arnold Hauseur, will be studied.

Advanced art history seminar

A seminar to be based on a topic selected with the help of the adviser on any current topic in art history. Such an issue should domicile in the candidates envisaged research area.

Curatorship and art business

Curatorship meaning and history since 1800. Art service/projects, Principles and practice of curatorship. Social perspectives of curating art shows exhibitions, types, motive and issues, Object-centred jury and thematic selection of art forms for exhibition, Art Studio/Gallery operation, materials acquisition, client services, publicity and public relation, legal matters such as contracts and copyright, catalogues etc. The Nigerian situation its problems and prospects.

Arts and heritage management

Art administration origin and patterns, Art services/cultural policy and theory, Arts and heritage in tourism policy and planning, Arts patronage and marketing, publicity and public relation, Cultural geography of museums, arts heritage and administration strategies, Eco-tourism management, Grants and project proposal, Perspectives in leisure and tourism.

6. QUANTITY SURVEYING

6.0 POSTGRADUATE PROGRAMMES IN QUANTITY SURVEYING

6.1 INTRODUCTION

The postgraduate programme in the Quantity Surveying programme is being offered to expose professionals in Quantity Surveying to advanced management skills to handle in line with their professional inputs diverse and complex projects from inception to completion. Projects are getting increasingly, large, more complex; traditional approaches to project delivery are being reviewed due to increasing pressures from clients that are getting increasingly sophisticated. Furthermore, projects are being executed across climates and international cultures with different contract and procurement arrangements. The provision of the postgraduate programme reflects a commitment to a belief that:

- i. The postgraduate programme in Quantity Surveying can contribute to production of high quality work force that can cope with the increasing and ever-changing sophistication in the construction industry both nationally and internationally;
- ii. The postgraduate programme in Quantity Surveying aims at promoting the knowledge and professional base of future managers of the construction industry as a way of stimulating national economic development;
- iii. The thought behind the postgraduate programme in Quantity Surveying believes that a sound knowledge of construction economics and project management best practices can enhance the competitiveness of its graduates in both the local and international environment.

6.2 Philosophy of the Postgraduate Programmes in Quantity Surveying

The programmes are rooted in the belief that the built environment industry mirrors the national economy. Economies that still have large mass of housing and infrastructure to provide and/or maintain for critical masses of their people have to put the industry in a front burner. The provision of high quality work force power to meet the challenges of a developing economy is indispensable. These challenges include requirements and research endeavor's to promote the built environment industry and general development of the society.

6.3 COURSES/PROGRAMMES/AREAS OF SPECIALIZATION OFFERED BY QUANTITY SURVEYING

The programmes run are as follows:

1. Postgraduate Diploma in Quantity Surveying (PGD);
2. Master of Science/Master of Technology in Quantity Surveying;
3. Master of Philosophy (M.Phil) Degree in Quantity Surveying;
4. Doctor of Philosophy (Ph.D) Degree in Quantity Surveying.

6.4 ADMISSION REQUIREMENTS

6.4.1 Postgraduate Diploma

The following shall qualify for admission into the Postgraduate Diploma in Quantity Surveying; candidate must hold:

- a) At least a B.Sc. Degree in Quantity Surveying, Building, Architecture and Engineering (Civil, Mechanical, Electrical) from any Nigerian University or any other recognized degree awarding institution.

- b) In addition to the above qualifications, candidates shall be required to satisfy all other conditions stipulated by the Quantity Surveying Department and the Postgraduate School/School of Postgraduate Studies of the University.

6.4.2 Professional Master's Degree Programmes

The following shall qualify for admission to the professional Master's programme. The candidates must hold:

- a) At least a second-class honours degree in Quantity surveying from any Nigerian or other recognized degree-awarding institution;
- b) A third class honours degree in any of the Built environment disciplines and a postgraduate diploma in Quantity Surveying, with a weighted average of not less than 50%, from Nigerian or other recognized Institutions;
- c) At least an HND(upper credit minimum) from any Nigerian Diploma Awarding Institution **And** a current registration of the Quantity Surveyors Registration Board of Nigeria (QSRBN);

In addition to the above qualifications, candidates shall be required to satisfy all other conditions stipulated by the Quantity Surveying Department and the Postgraduate School/School of Postgraduate Studies of the University.

6.4.3 Academic Master's Degree Programmes in Quantity Surveying

To qualify for admission into the M.Sc. /M. Tech degree programme a candidate must hold:

- a) At least a second-class B.Sc/ B.Tech Degree in Quantity Surveying obtained from any Nigerian University or any other recognized institution;
- b) In addition to the above qualification, candidates shall be required to satisfy all other conditions stipulated by the Quantity Surveying Department and the Postgraduate School/School of Postgraduate Studies of the University.

6.4.4 Master of Philosophy (M.Phil) Degree Programmes in Quantity Surveying

To qualify for admission into the M.Phil degree programme a candidate must hold:

- a) Masters Degree (M.Sc/M.Tech) in Quantity Surveying with a Weighted Average of not less than 60% from any Nigerian or recognized institution;
- b) An M.Sc in Construction Management or equivalent with a GPA of at least 2.79 in the grading system in use before 1990/91 or 4.00 in the grading system after the 1990/91 session;

In addition to the above qualifications, candidates shall be required to satisfy all other conditions stipulated by the Quantity Surveying Department and the Postgraduate School/School of Postgraduate Studies of the University.

6.4.5 Doctor of Philosophy (Ph.D) Degree Programmes in Quantity Surveying

To qualify for admission into the Ph.D degree programme a candidate must hold:

- a) Master's Degree (M.Sc/M.Tech) in Quantity Surveying with a Weighted Average of not less than 60% from any Nigerian or recognized institution;
- b) An M.Phil in Construction management or equivalent;
- c) An M.Sc in Construction Management or equivalent with a GPA of at least 2.79 in the grading system in use before 1990/91 or 4.00 in the grading system after the 1990/91 session

In addition to the above qualifications, candidates shall be required to satisfy all other conditions stipulated by the Quantity Surveying Department and the Postgraduate School/School of Postgraduate Studies of the University.

6.5 DURATION OF PROGRAMMES

6.5.1 Postgraduate Diploma (PDQS)

- a) Full-time: Minimum of three (3) semesters
- b) Part-time: Minimum of four (6) semesters

6.5.2 Professional Master's Degree (MQS)

- a) Full-time: Minimum of three (3) semesters
- b) Part-time: Minimum of six (6) semesters

6.5.3 Academic Master's Degree (M. Sc/ M.Tech)

- a) Full-time: Minimum of three (3) semesters
- b) Part-time: Minimum of six (6) semesters

6.5.4 Master of Philosophy Degree (M. Phil)

- a) Full-time: Minimum of four (4) semesters
- b) Part-time: Minimum of eight (8) semesters

6.5.5 Doctor of Philosophy Degree (Ph.D)

- a) Full-time: Minimum of six (6) semesters
- b) Part-time: Minimum of eight (8) semesters

6.6 REQUIREMENTS FOR GRADUATION

6.6.1 Postgraduate Diploma in Quantity Surveying

- i) In order to be eligible for the award of PGD, a candidate must pass all the prescribed courses and have a weighted average not less than 50%.
- ii) A candidate must also satisfy all other conditions stipulated in the regulations of the Postgraduate School/School of Postgraduate Studies.

6.6.2 Professional Master's Degree in Quantity Surveying

- i) In order to be eligible for the award of Professional Master's Degree, a candidate must pass all the prescribed courses and have a weighted average not less than 50%.
- ii) A candidate must also satisfy all other conditions stipulated in the regulations of the Postgraduate School/School of Postgraduate Studies.

6.6.3 Academic Master's Degree in Quantity Surveying

- i) In order to be eligible for the award of Academic Master's Degree (M.Sc/ M.Tech in Quantity Surveying) a candidate must pass all the prescribed courses and have a weighted average not less than 50%.

- ii) A candidate must also satisfy all other conditions stipulated in the regulations of the Postgraduate School/School of Postgraduate Studies.

6.6.4 Master of Philosophy (M. Phil) Degree in Quantity Surveying

- i) In order to be eligible for the award of Master of Philosophy (M. Phil) Degree in Quantity Surveying a candidate must pass all the prescribed courses and have a weighted average of not less than 60%.
- ii) A candidate must also satisfy all other conditions stipulated in the regulations of the Department and the Postgraduate School/School of Postgraduate Studies

6.6.5 Doctor of Philosophy (Ph.D) Degree in Quantity Surveying

- i) In order to be eligible for the award of Ph.D Degree a candidate must pass the prescribed coursework amounting to a minimum of six (6) units. In addition, candidates must pass the oral examination with respect to the thesis including a Qualifying Examination and a final Oral Examination in accordance with the approved University Regulations.
- ii) A candidate must also satisfy all other conditions stipulated in the regulations of the Post graduate School.

6.7 EXAMINATIONS, GRADING, PROCEDURE AND RESULTS

6.7.1 Examination

- a) In addition to continuous assessment, final examinations shall be given for every course at the end of each semester.

The total scores obtainable for any course (continuous assessment and final examinations) is 100%. The total final examination scores would vary as follows from one course to another depending on the score of the continuous assessment of a course as explained in section 3.4 (ii)

Continuous Assessment	30	40	100
Final Examination	70	60	0
Total	100	100	100

- b) Each course shall normally be completed and examined at the end of the semester in which it is offered.
- c) A written examination shall normally last a minimum of one hour for one unit course, and a course of 3 credit units shall have 3 hours of examination.

6.7.2 Pass Mark

The minimum pass mark in any course shall be 50%

6.7.3 Grading System

Grading of courses shall be done by a combination of percentage marks and letter grades translated into a graduated system of Grade Point Equivalents (GPE). For the purpose of determining a student’s standing at the end of every semester. The Grade Point Average

(GPA) system shall be used. The GPA is computed by dividing the total number of credit points (TCP) by the total number of units (TNU) for all the courses taken in the semester. The credit point for course is computed by multiplying the number of units for the course by the Grade Point Equivalent of the marks scored in the course. Each course shall be graded out of a maximum of 100 marks and assigned appropriate Grade Point Equivalent as in the following table:

(i) credit units	(ii) %scores	(iii) letter Grades	(iv) Grade Points (GP)	(v) average (GPA)	(vi) (CGPA)	(vii) Class of Degree
Vary according to contact hours assigned to each course per week per semester, and according to load carried by students	70 – 100	A	5	Derived by multiplying I and IV and dividing by Total Credit Units	4.50– 5.00	Distinction on
	50 – 69	B	4		2.40-4.49	Pass
	below 50	F	0		below 2.40	fail

6.7.4 Presentation of Results

Results from the Postgraduate School/School of Postgraduate Studiess’ Board of Examiners shall be presented to Senate for approval.

6.7.5 Release of Results

Results shall be released/published subject to approval by the Senate.

6.8 DEGREE CLASSIFICATION

The determination of the degree shall be based on the Cumulative Grade Point Average (CGPA) earned at the end of the programme. The GPA is computed by the total number of credit points.

(TCP) by the total number of units (TNU) for all the courses taken in the semester. The CGPA shall be used in the determination of the class of degree according to the following breakdown:

CUMULATIVE GRADE POINT AVERAGE (CGPA)	CLASS OF DEGREE
4.50 - 5.00	Distinction
2.40 - 4.4	Pass
Below 2.40	Fail

6.9 RESOURCE REQUIREMENTS FOR TEACHING AND LEARNING IN THE PROGRAMME

6.9.1 ACADEMIC STAFF

(i) TEACHER TO STUDENTS' RATIO

The staff to students ratio for the Undergraduate Programme in Environmental Studies is 1:15. The general norm for resource requirements for the postgraduate to undergraduate programmes is 1:10. Hence for effective teaching and learning the M.Sc/M.Tech. programme shall have a teacher to students ratio of 1 to 10.

(ii) ACADEMIC STAFF WORK-LOAD

With a minimum load of 18 credits for students and a minimum of six full-time equivalents to staff in each programme, staff should have a maximum of 15 contact hours per week for lectures, tutorials, term papers and supervision of projects.

(a) STAFFING

The NUC guidelines on staff/students ratio for the postgraduate programmes shall apply. However, there should be a minimum of six full-time equivalents of staff on the ground in a department. At least, 75% of teaching staff should have doctoral degrees as well as relevant professional qualification/registration

(b) STAFF MIX

The staff mix recommended for effective curriculum delivery in the Master's programme is 20:30:50, Professor/Reader: Senior Lecturer: others.

6.9.2 NON-ACADEMIC STAFF

The services of support staff, which are indispensable in the proper running of the programme as well as for administration, are required. It is important to recruit very competent senior technical staff to maintain teaching and research equipment. Universities should pay attention to optimum proportioning of the non-academic staff to avoid redundancy and overstaffing

- The ratio of non-academic staff to academic staff should be 1:4.
- Among the non-academic staff, the ratio of senior staff to junior staff should be 3:2.

6.9.3 COMPUTER LITERACY

With the computer age and application of information technology, both academic and non-academic staff should be computer literate, attain adequate level of proficiency in industry and programme relevant software applications.

6.9.4 ACADEMIC PHYSICAL SPACE AND EQUIPMENT REQUIREMENTS

i) Professional Physical Facilities Requirements

- a) Computer Room, including Virtual Library facilities
- b) Board Room to enhance professional development
- c) Workstation

ii) **Office Accommodation**

The standard space requirements as shown below shall be required

Professor's Office	1.85m ²
Head of Department's Office	18.5 m ²
Tutorial Teaching Staffs Officer	13.5 m ²
Other Teaching Staff Space	7.5 m ²
Technical Staff Space	7.5m ²
Secretarial Space	7.5m ²
Seminar Space/Per Student	1.85/ m ²

iii) **Classroom Space and Examination Theatres**

- Adequate classrooms should be provided with adequate furniture to aid learning and teaching.
- Examination halls and theatres should be provided to minimize the rate of examination malpractices.

i) **Equipment**

For effective learning, the following equipment should be provided:

- Computers
- Photocopying Machines/video Cameras
- Tape Recorders
- Internet and e-mail facilities

6.9.5 LIBRARY FACILITIES:

There must be adequate library facilities to cater for the interests of all the courses in the programmes. These include current journals, handbooks, textbooks, manuals, codes of practice, standards and specifications, etc.

6.9.6 LEARNING OUTCOMES FOR ENVIRONMENTAL STUDIES PROGRAMMES

Comprehensive Knowledge of Areas of Specialization

Graduates should have a comprehensive knowledge of their areas of specialization,. embodying an understanding of the theoretical foundations and quantitative tools of the areas of specialization, as well as the ability to apply this knowledge to actual problems.

Problem solving capabilities

Graduates should be able to demonstrate problem solving capacity through literal, critical, innovative and creative connections among diverse fields of study in analyzing problems.

Global Perspective

Graduates should have a global perspective, based on an understanding of both the domestic and global environments of the organization.

Communication competency

Graduates should be able to communicate effectively both graphically, in writing and orally in ways appropriate for a variety of objectives and audiences.

Ability to manage information

Graduates should have an understanding of advances in information technology and be able to effectively integrate the innovations in their decision-making processes.

Social responsibility

Graduates should understand and demonstrate the ethical considerations and environmental ramifications of their decisions.

Behavioural skills

Graduates should understand human behaviour in the built environment. They should:-

- Have the ability to utilize leadership skills effectively;
- Interact effectively in group situations;
- Manage culturally diverse environments;
- Help others develop their skills;
- Resolve conflict effectively and act independently in low feedback environments.

6.10 DOMAIN OF PROGRAMME

The postgraduate Quantity Surveying programmes shall be domiciled in the Quantity Surveying Department

6.11 STUDENTS' ENROLMENT

- i) Enrolment for professional degree programmes shall be subject to the carrying capacity of the Department.
- ii) Enrolment for Academic degree programmes shall be subject to the carrying capacity of the Quantity Surveying Department but not more than 20% of the undergraduate enrolment of the Department.

6.12 ACADEMIC STANDARDS

The academic standards for the postgraduate Quantity Surveying programme shall include the following:

6.13 ACADEMIC REGULATIONS**6.13.1 ACADEMIC SESSION**

An academic session consists of two semesters. Each semester normally comprises 15 weeks of teaching and two weeks of examinations.

6.13.2 MODULAR SYSTEM

All Quantity Surveying postgraduate programmes shall be run on a modular system, commonly referred to as course unit system. All courses should therefore be sub-divided into more or less self-sufficient and logically consistent packages that are taught within a semester and examined at the end of that particular semester. Credit weights should be attached to each course.

6.13.3 DEFINITION OF CREDIT OR UNIT:

Credits are weights attached to a course. One credit is equivalent to one contact hour per week per semester of 15 weeks of lectures or tutorials, or three hours per week of term, studio or practicals per semester of 15 weeks.

6.14 PROGRAMME REQUIREMENTS

6.14.1 Registration Procedure

Registration of courses closes not later than the end of the third full week of the semester. A student can withdraw from the course without penalty any time up to and including the fifth week into the semester. Any student who withdraws after the seventh week will be deemed to have failed except in special cases approved by the Post graduate School on the recommendation of the Head of Department.

6.14.2 Student Academic Status

A student's academic status shall be determined on the basis of his/her performance at the end of the semester examinations. The following categorization shall be used:

i) **Good Standing**

To be in good standing, a student must in each semester have a Cumulative Grade Point Average (CGPA) of not less than 2.40.

ii) **Probation**

A student whose Weighted average is less than 50% or whose CGPA is below 2.40 at the end of a particular semester shall be placed on probation for one academic session. Such a student shall be allowed to register for courses at the next higher level in addition to his/her probation level courses provided that the total number of courses that he/she has shall not exceed 15 credit units per semester in addition to the following:

The regulation in respect of the student's work load is complied with and the pre-requisite courses for the higher level courses have been passed.

iii) **Withdrawal**

A student whose CGPA falls below 2.40 at the end of a particular year of probation shall be required to withdraw from the university.

A student who has been on probation once and whose CGPA is still less than 2.40 in the session immediately following the one on which he was already on probation shall be required to withdraw from the programme.

iv) **Transfer**

Students who transfer from other Universities shall be credited with only those courses deemed relevant to the programmes, which they have already passed prior to their transfer provided that they shall meet the additional requirements in the receiving Department.

6.14.3 ATTENDANCE

In order to be eligible to take examination in a particular taught course, a student shall be expected to have accumulated a minimum of 75% attendance of the total period of formal instruction delivered for the course.

6.14.4 COURSE EVALUATION

i) Attainment levels

In the Postgraduate Quantity Surveying Programmes, assessment of students' achievements shall be based on:

- Examinations
- Term Papers
- Contract Documentation analysis
- Group project Assignments
- Dissertations/Theses

ii) Continuous Assessment

Continuous assessment shall be done through essays, tests, term papers, tutorial exercises, quizzes and home-works.

- a) Scores from continuous assessment shall not constitute less than 30% of the final marks for courses which are primarily theoretical.
- b) For courses which are partly term paper presentations and partly theoretical, scores from continuous assessment shall not constitute less than 40% of the final marks.
- c) For courses that are entirely term paper presentation, continuous assessment shall be based on a student's term paper or reports and shall constitute 100% of the final marks.

6.14.5 PROJECT REPORTS

(a) Project Reports

There would be Project Report presentations, which shall form part of the graduation requirements.

6.15 ENTREPRENEURIAL STUDIES

Entrepreneurial Studies shall be an integral part of Post-Graduate Quantity Surveying Programme with the aim of empowering the graduates with skills that will enable them engage in income-yielding ventures thus preparing them to be responsible, enterprising individuals who will become entrepreneurs or entrepreneurial thinkers and contribute to national economic development and sustainable communities.

6.16 EXTERNAL EXAMINATION SYSTEM

The external examination system shall be used in the final year of the graduate programme to assess final year courses and projects, and to certify the overall performance of the graduating students, as well as the quality of facilities and teaching.

6.17 PROGRAMMES OFFERED

The programmes offered are as follows:

1. Postgraduate Diploma in Quantity Surveying (PGD)
2. Master of Quantity Surveying (MQS)
3. Master of Science/Master of Technology in Quantity Surveying
4. Master of Philosophy (M.Phil) Degree in Quantity Surveying
5. Doctor of Philosophy (Ph.D) Degree in Quantity Surveying

6.17.1 AVAILABLE OPTIONS/SPECIALIZATION

1. Postgraduate Diploma in Quantity Surveying (PGD)
2. Master of Quantity Surveying (MQS)
3. Master of Science/Master of Technology in Quantity Surveying
 - a. Construction Economics
 - b. Commercial Management
 - c. Infrastructure Cost Management
 - d. Construction Project Management
 - e. Professional Practice Management
 - f. Construction Law and Dispute Resolution
4. **Master of Philosophy (M.Phil) Degree in Quantity Surveying**
Candidates can specialize in any of the six areas listed above.
5. **Doctor of Philosophy (Ph.D) Degree in Quantity Surveying**
Candidates can specialize in any of the six areas listed above.

6.17.2 DOCTOR OF PHILOSOPHY Ph.D. IN QUANTITY SURVEYING

The Ph.D. programme is open to candidates having:

An MSc in Construction Management or equivalent with a GPA of at least 2.79 in the grading system in use before 1990/91 or 4.00 in the grading system after the 1990/91 session. An M.Phil in Construction management or equivalent.

Ph.D. Degree Award Requirements

To obtain a Ph.D. in Quantity Surveying, a candidate must take and pass at least six units of the courses listed in the specific area of specialization or research agenda;

Satisfy all other requirements as stipulated in the Regulations of Postgraduate Studies.

6.18 PHILOSOPHY AND OBJECTIVES

6.18.1 Postgraduate diploma (PGD) programme

(i) Quantity Surveying

The philosophy of the postgraduate programme is to create an enabling environment of interaction between those candidates who have acquired professional experience with limited academic exposure and those graduates in quantity surveying and cognate disciplines that might not have gone through the rigour of practical experience.

The objectives of the Postgraduate programme in Quantity Surveying are to:

1. Provide an opportunity for advanced knowledge in quantity surveying for those in practice without going through formal postgraduate degrees;
2. Help those who may wish to make up their deficiencies in their first degrees especially to be able to pursue higher degree programmes;
3. Bridge the gap between the Higher National Diploma and first degree in Quantity Surveying in order to allow the former to pursue higher professional degree programmes and qualify them for registration with the Quantity Surveyors Registration Board of Nigeria (QSRBN).

(ii) **Construction Economics/Commercial Management/Construction Project Management/ Infrastructure Cost Management/Construction Law and Dispute Resolution/Professional Practice Management.**

The need to produce a pool of well-seasoned multidisciplinary professionals for effective management of the construction industry in order to improve its performance and make significant contributions to the Nigerian economy is urgent. Various professionals are involved in the delivery of construction projects from conception to completion and anyone of these professionals may be appointed to the positions of project/construction manager as may be deemed fit by the employer, especially as it is the practice in the industry in Nigeria. In view of this, all these various professionals need a continuous update and development of their knowledge of management practices and new innovations in the industry in order to be able to face these challenges. The philosophy of the programme is, therefore, to improve the knowledge of construction professionals in the management of all forms of infrastructural development.

The objectives of the programme are to:

1. Help those who may wish to make up their deficiencies in their first degrees, especially to be able to pursue a higher degree programme in construction management.
2. Produce a crop of well-seasoned construction managers that can function effectively well for speedy delivery of construction projects.

6.18.2 Master of Technology (M.Tech)/Doctor of Philosophy (Ph.D.) programmes

With specialization in: Construction Economics/Commercial Management/Construction Project Management/ Infrastructure cost Management/Construction law and dispute Resolution/Professional Practice Management. Quantity Surveying provides a comprehensive cost and managerial control of all the activities in the construction sector of any nation's economy. There is therefore the need to continue to train professionals in these areas to meet these challenges of a growing industry. The construction management option is to equip professionals working in the construction industry to play an effective role in managing construction activities at both the design and construction stages.

The specific objectives of the programmes are to:

1. Provide advanced academic courses for students who want to undertake further studies and research in Quantity Surveying;

2. Develop a more comprehensive body of knowledge for higher degree programmes in Quantity Surveying through research which the profession has been lacking over the years;
3. Meet the manpower requirements for teaching and research especially in Quantity surveying;
4. Establish research areas which will lead to the improvement of design, management and maintenance methods for construction projects.

6.19 COURSE OUTLINE FOR EACH PROGRAMME

a. Postgraduate Diploma (PGD) Programme Quantity Surveying

	Course Title	Units
1.	Advanced Quantity Surveying Measurement and specification	3
2.	Construction Technology and Services	3
3.	Development Economics	2
4.	Construction Tendering and Estimating	2
5.	Contract Law and Administration	2
6.	Research Methodology and Seminar	2
7.	Measurement of Mechanical and Electrical Services	2
8.	Construction Technology and Materials	2
9.	Construction Management and Procedure	2
10.	Project Management	2
11.	Cost Control	2
12.	Measure of Civil Engineering Works	2
13.	Heavy Engineering	2
14.	Quantity Surveying Practice and Procedure	2
15.	Information Technology in Construction	2
16.	Research Project/Long Essay	2
17.	Contract Documentation Project	4

Professional Master's in Quantity Surveying (MQS)

	Course Title	Units
1	Construction Technology and Services	2
2.	Construction Tendering and Estimating	2
3.	Contract Law and Administration	2
4.	Research Method in Construction and Seminar	2
5.	Construction Technology and Materials	3
6.	Project Management	2
7.	Budgeting and Financial Control	2
8.	Human Resource Management in Construction	2
9.	Information Technology in construction	2
10.	Maintenance Technology and Management	2
11.	Quality Control and Management in Construction	2
12.	Project/ Dissertation	4
	Total	26

Electives (To choose 4 units)

	Course Title	Units
1.	Construction Scheduling	2
2.	Operations Research in Construction	2
3.	Construction Codes and Regulations	2
4.	Construction Plants and Equipment	2

Master in Quantity Surveying (Construction Economics Option)

	Course Title	Units
1.	Advanced design economics and cost planning	3
2.	Cost Control Theory and Practice	3
3.	Applied Economic Theory in Construction	3
4.	Value Engineering/ Analysis	3
5.	Engineering and Project Economics	3
6.	Lean Construction Theory and Application	3
7.	Project Financing	3
8.	Quantitative and Qualitative Research Methods	3
9.	Master's Thesis Research Project	4
	Total	28

M.Sc/M.Tech Quantity Surveying (Commercial Management)

	Course Title	Unit
1.	Competitiveness in Contracting Business	3
2.	Construction Risk Management	2
3.	Project Planning and control	3
4.	Advanced Estimating and Tendering	3
5.	Negotiation	2
6.	Plant and Equipment Management	2
7.	International Dimensions In Construction	2
8.	Quantitative and Qualitative Research Methods	3
8.	Master's Thesis Research Project	4
	Total	24

M.Sc/M.Tech Quantity Surveying (Professional practice Management)

	Course Title	Units
1.	Quantity Surveying Practice and procedure	3
2.	Marketing of professional Services and client Management	3
3.	Organizational culture and behavior	2
4.	Contract Administration	3
5.	Ethics in Professional Practice	2
6.	Quality Control and Management	2
8.	Negotiation Skills	2
9.	Quantitative and Qualitative Research Methods	3
	Master's Thesis Research Project	4
Total		24

M.Sc/M.Tech Quantity Surveying (Construction Project Management)

	Course Title	Units
1.	Leadership Principles applied to Construction	3
2.	Construction Resources Management	2
3.	Time Management in Construction	3
4.	Quality Control and Management in Construction	3
5.	Project Performance Measurement	2
6.	Human Resources Management	2
7.	Negotiation Skills	2
8.	Quantitative and Qualitative Research Methods	3
9.	Master's Thesis Research Project	4
Total		24

M.Sc/M.Tech Quantity Surveying (Construction Law and Dispute Resolution)

	Course Title	Units
1	Elements of law and its administration	3
2.	Law of contract and tort	2
3.	Standard forms of construction contracts	3
4.	Construction Claims	3
5.	Case law in Construction	2
6.	Dispute Resolutions	2
7.	Negotiation Skills	2
8.	Quantitative and Qualitative Research Methods	3
9.	Master's Thesis Research Project	4
Total		24

M.Sc/M.Tech Quantity Surveying (Infrastructure Cost Management)

	Course Title	Units
1.	Elements of construction technology of Infrastructure projects	3
2.	Estimating and tendering for infrastructure projects	3
3.	Engineering, Procurement and Construction Contract	3
4.	Maintenance Management of Infrastructure projects	2
5.	Construction Resources Management	2
6.	Quality Control and Management	2
7.	International Dimensions in Construction	2
8.	Quantitative and Qualitative Research Methods	3
9.	Master's Thesis Research Project	4
	Total	24

Electives (6 Units of Electives) All options/ specialization may select courses from the under listed courses

	Course Title	Units
	Project Psychology	2
	Strategic Planning in Construction	2
	International Dimensions in construction	2
	Construction Estimating and Logistics	2
	Contract law and Administration	2
	Project Risk management	2
	Advanced Project Management	2
	Operations Research Application	2
	Financial Management in Construction	2
	Project Performance Measurement	2

M.Phil in quantity surveying (additional 6 Units to be taken)

	Course Title	Units
1.	Research Issues in Construction economics	2
2.	Seminar in Construction economics	2
3.	Research Issues in Commercial Management	2
4.	Seminar in Commercial Management	2
5.	Research Issues in Professional practice Management	2
6.	Seminar in Professional Practice Management	2
7.	Research Issues in Infrastructure Cost Management	2
8.	Seminar in Infrastructure Cost Management	2
9.	Research Issues in Construction Law and Dispute Resolution	2
10.	Seminar in Construction Law and Dispute Resolution	2
11.	Issues in Construction Project Management	2

12.	Seminar in Construction Project Management	2
13.	Advanced Research methods applicable to construction Thesis	2

Doctor of Philosophy (Ph.D.) Programme
Course Title

	Units
Ph.D Thesis	
Tools and Methods in Construction Research	3
Independent Study on Subject of Specialization	3

6.20 COURSE SYNOPSES

1. Postgraduate Diploma (PGD) Programmes

1	<p>Advanced Building Measurement and Description Reviewing of measurement conventions and billing process Review of standard methods of measurement and description Critical examination of various bill formats Specification writing Application of measurement rules to large and complex projects:</p> <ul style="list-style-type: none"> • Housing projects (Residential estates) • Mixed use developments • High rise buildings • Structural Steel works • External woks involving various kinds of fencing, estate road works, drainage systems in building projects, external electrical works 	3
2.	<p>Construction Technology and Building Services Site Preparation – Dewatering and soil stabilization, Anchorage, Foundation systems and types Floor construction Roof construction for complex structures Production and fabrication of steelwork Precast and prestressed construction Industrialized system Electrical Installation, ventilation and air conditioning, mechanical movement systems, Fire protection</p>	3
3.	<p>Development Economics Aim of public and private developers. Factors influencing the development process. Budgeting for private and public development. Choice and acquisition of sites and their effects on development, Feasibility studies – Developer’s budget. Source of fund for development, public investment, mortgage financing, cash flow forecasting, Development bonds, loans, grants, subsidy and taxation.</p>	2

4. **Construction Tendering and Estimating** 2
 Review of the Estimating & Tendering processes
 Computation of unit rates for complex building and civil engineering works.
 Preparation of sub-contractors' quotations – mechanical and electrical works, material manufacturing firms.
 Preparation of schedule of materials, labour and plant items.
 Modern estimating techniques,
5. **Contract Law and Administration** 2
 A general review of the principles of the law of contract, tort, property and land laws
 Standard forms and their application to construction projects
 Interpretation of the current conditions of contract in use (JCT 80, SFBCN, 1990 etc)
 Discrepancies between Building and civil engineering contracts in terms of their conditions
 FIDIC conditions,
 Arbitration and awards – Principles, Practice
6. **Research Methodology and Seminar Proposal** 2
 The course introduces students to the skills necessary to conduct vigorous and original research and effectively communicate their research findings in a clear and systematic manner. Research and the tools for research – meaning of research, k types of research, tools for research. Research planning and design, planning, review of literature, nature of data/research methodology, research proposal. Research methodology, Presentation of research results. The students are expected to present two separate seminars on topical issues which may relate to their proposed research project.
7. **Measurement of Building and Engineering Services** 2
 Measurement and description of mechanical installation in buildings to cover:
 Drainage works, air-conditioning and ventilating systems, fire prevention and fighting systems, mechanical movement systems, refuse collection and disposal systems
 Measurement and description of Electrical and electronic installation in buildings to cover:
 Electrical systems in buildings, security installation, communication installation
 Alternative energy supply installations
8. **Construction Technology and Materials** 2
9. **Construction Management and Procedure** 2
 Management ideas/thoughts
 Decision making process including the use of committee system

Organization and Accountability
 Office automation
 Analogue and digital computing
 Personnel administration communication
 Production planning and program – Bar chart, CPM etc
 Site Management procedure, work and productivity studies
 Working capital and flow of found in the construction industry
 Material management
 Plant management

10. **Project Management** 2
- Financial Management – Banking system, Stock exchange, Construction Finances, Insurance industry and how they relate to construction, Management, Servicing and repayment of loans, methods of loan renegotiations and rescheduling. Contract procurement system vis-à-vis the project management option. Introduction to Project Management Consultancy. Qualifications, functions and responsibilities of the Project Manager. Funding and the project manage, marketing and public relations function and policies. Quantity Surveying and Project Management and prime consultancy compared. Evaluation of project management consultancy in Nigeria
11. **Cost Control** 2
- A review of cost implications of design variables and construction methods
 Cost planning techniques and their practical application to typical projects.
 Cost-in-use studies
 Investment appraisal
 Feasibility studies
 Cost benefit analysis
 Value Engineering/analysis
 Cost modelling.
12. **Civil Engineering Construction Technology and Material** 2
- Civil Engineering Construction and materials to cover the following: – road construction types, Bridges, Dams, Harbour works, Rail track, Airport, Tunneling,
 Sewage treatment installation etc
 Communication system, structural timber, concrete technology,
 Innovation in construction materials
 Use of local materials
- 13 **Heavy Engineering** 2
- Units Scope of Heavy engineering – Definition, Principles and constituents of heavy engineering i.e. equipment, facilities, structures and raw materials for pharmaceutical chemicals. Nuclear energy, gas exploration and production, oil exploration, production and refining, power generation, food and drinks, paper milling, steel and non-ferrous metal production, telecommunicating, etc. procurement of engineering contracts – Technological licensing and patents.

Turnkey procurement method. Bidding procedures.
Financing of engineering contracts – Feasibility studies, letter of credit, suppliers credit, contractor financing
Measurement and control of engineering projects – construction site services
Scaffolding, steelwork, plant, ductwork, pipe work, electrical work, instrumentation, insulation, protective covering, sundry items

14. **Quantity Surveying Practice and Procedure** 2
Roles and Responsibilities of participants in Building and civil engineering contracts especially the relationships between Building and others
Scope of Quantity Surveying function from inception to completion of projects
Valuation and Final Accounts procedures
Principles of professional conducts and misconducts
Conditions of engagement of the QS
Involvement of QS in different contract procurement methods
Principles of fee calculation
The future and development of Quantity Surveying
15. **Information Technology in Construction** 2
Introduction to various types of computer components on a Computer
The application of the computer – principles and introduction; Word processing, Data base, spread sheets, Graphics,
Desk-top publishing integrated packages, Estimating, cost-planning and modelling, contract documentation and administration etc.
Computer aided Design.
Quantity surveying software,
Current Developments in Micro-Computing-Current trends in hardware and software technologies
16. **Research Project/Long Essay** 2
Each candidate is to choose a project topic for elementary research exercise/long essay. The project should be examined by an external assessor to act as a quality assurance mechanism
17. **Contract Documentation Project** 4
Each Candidate is to produce a comprehensive contract document on a chosen/selected project type. The project is to show the candidates' understanding of the process and procedure involved in preparing documents which are to be used for administering all classes of construction contract.

Electives

Course Title	Units
Project Psychology Evaluation of the interaction of people in the project environment, nature of effective team work and the importance of appropriate leadership, Project Environment vis-à-vis communication, behaviour and dealing with the inevitable conflicts. Industrial psychology – industrial psychology as a science of measurement of intelligence, perception. Personality, arousal etc. Development of skills. Occupational choices, motivation and job satisfaction, Recruitment and selection techniques, Case studies.	2
Strategic Construction Procurement Exploration of professional services procurement by client within the construction industry. History nature of the industry. Examination of the new procurement approaches being implemented within the construction industry. Importance of working in partnership across organizations, professions and with the communities. Experience, potential and problems of inter-agency working in the public and private sectors. Empirical and theoretical knowledge of current issues of collaborative working. Analysis and evaluation of examples of collaborative working practice. Ethics and corporate social responsibility. Future issues in construction procurement.	2
International Dimensions in construction History of modern contracting; current situation and future trends. The role of culture in construction management. International construction markets and emerging trends. Managing construction in international settings. International Joint Ventures, Technology transfer, partnering and strategic alliance. Quality management in construction international standards, - 180 140000 – safety standards. Private finance of public infrastructure. The nature of international market. The major parties (from) actually improved in international construction: international contracts and bidding strategies, the financial aspects of international construction and International agencies. Case studies in emerging issues for construction management in specific countries.	2
Construction Estimating and Logistics Analytical estimating and application of work- study programmes (this will involve practical studies aimed at improving the standard labour outputs used for estimating). Tendering and bidding theory, material cost control, variances, cost coding and games theory.	2
Contract Law and Administration A detailed and comparative knowledge of the standard forms of Quantity Surveying and Civil engineering contracts and related sub-contracts including their interpretation and application in Nigeria. Examination of typical contract documents in relation to key stages in project development. Case studies, cited and decided cases including analysis, interpretation and justifications. Contract conditions for emerging contract procurement methods such as design and build, project management etc. Legal aspects relevant to Quantity Surveying maintenance.	2

Project Risk Management 2

General theories of risk and decision making. The nature of decision and the criteria upon which decisions are made. The nature of risk; including the relationship between risk and uncertainty, reward, value and premiums together with their calculations. Approach to risk identification, evaluation, assessment, allocation and management, Approaches to decision-making. Project procurement, funding and contractual division of project risk. Tools and techniques for decision-making and risk analysis.

Advanced Project Management 2

An overview of contract procurement systems and the integration of project management. Definition and approach to construction project management. Conflict of professional roles and the integration of project management. Organization structure relevant to project management. Environmental effects and project characteristics. Structure of clients and professional organization. Dispute and conflict resolution, leadership. Team Quantity Surveying power and the project manager. Decision making and the project managers.

Operations Research in Construction 2

Linear programming
Transportation and Assignment problems
Programming and scheduling
Queuing Theory, Inventory control, Simulation models etc

Financial Management in Construction 2

Importance of financial management to project management, evaluation of the significance of financial matters in decision making by all participants in the project process, process of financial reports, analysis, Financial strategies and instruments for ensuring the solvency and sustainability of corporate business ventures. Methods of raising capital and the issue in portfolio management in the light of the risk and rewards associated with investment initiatives, Project financing options (private finance and joint venture initiatives). Company financial structured depreciation, Budgeting, Cash flow, Lock-up, working capital, costs and break-even Analysis. . Cost control, variance analysis. Time- Value of money. Capital investment appraisal, Servicing and repayment of loans, methods of loan renegotiation and rescheduling.

Project Performance Measurement 2

Introduction to construction productivity analysis and performance management. Life cycle of performance measurement system. Balance Score card. Key performance indicators-Factors affecting construction productivity. On-site factors-job conditions, preplanning management coordination, human factors, equipment utilization, material handling, site organization, work environment (temperature, humidity and wind. Off-site factors – government regulation, financial status, organization, land contractual constraints. Supplies etc. Direct productivity measurement; production units/input unit. Indirect productivity measurement – work sampling five minute rating, time-motion study, etc. Construction productivity improvement – constructability study, selection of designer contractor, and construction measurement firm etc. Construction stage-data gathering for on site productivity improvement; preplanning for on-site to improvement, Operation modelling – use of

operation modelling for productivity..

COURSE SYNOPSIS (MQS)

	Course Title	Units
1	Construction Technology and Services	2
2	Construction Tendering and Estimating Review of the Estimating & Tendering processes Computation of unit rates for complex building and civil engineering works. Preparation of sub-contractors quotations – mechanical and electrical works, material manufacturing firms. Preparation of schedule of materials, labour and plant items. Modern estimating techniques,	2
3.	Contract Law and Administration A detailed and comparative knowledge of the standard forms of Quantity Surveying and Civil engineering contracts and related sub-contracts including their interpretation and application in Nigeria. Examination of typical contract documents in relation to key stages in project development. Case studies, cited and decided cases including analysis, interpretation and justification. Contract conditions for emerging contract procurement methods such as design and build, project management etc. Legal aspect relevant to Quantity Surveying maintenance.	2
4.	Research Method in Construction and Seminar The course introduces students to the skills necessary to conduct vigorous and original research and effectively communicate their research findings in a clear and systematic manner. Research and the tools for research – meaning of research, k types of research, tools for research. Research planning and design, planning, review of literature, nature of data/research methodology, research proposal. Research methodology, Presentation of research results. The students are expected to present two separate seminars on topical issues which may relate to their proposed research project.	2
5.	Construction Technology and Materials	3
6.	Project Management Financial Management – Banking system, Stock exchange, Construction Finances, Insurance industry and how they relate to construction, Management, Servicing and repayment of loans, methods of loan renegotiations and rescheduling. Contract procurement system vis-à-vis the project management	2

option. Introduction to Project Management Consultancy. Qualifications, functions and responsibilities of the Project Manager. Funding and the project manage, marketing and public relations function and policies. Quantity Surveying and Project Management and prime consultancy compare. Evaluation of project management consultancy in Nigeria

7. **Budget and Financial Control** 2
 Introduction to Business organization, financing Modern Business
 Accounting Theory, Cost Accounting, Purpose of Accounting Time-Value of Money in financial Decisions, Use of Profit Information, Working Capital management, Financial Analysis and Planning. Cash Flow Forecasting, Sources of Capital, Developers Budgeting.
8. **Human Resources Management in Construction** 2
 Classification of construction workers
 Ways of satisfying the training needs of the groups, consideration of welfare package, productivity and industrial relations of construction workers, recruitment procedures in the construction industry
 Manpower development for personnel
 9. Information Technology in construction 2
10. **Maintenance Technology and Management** 2
 Definition. Types and Nature of Building Maintenance. Maintenance Needs, Maintenance Operation Plan Causes, Effects and Remedies to common Building Defects e.g. Cracks. Settlement, condensation and Dampness. Underpinning, Principles and methods, maintenance System, Planning and Execution of maintenance Work, Building maintenance Policy Formulation, Schedules of dilapidation and conditions, Survey of Building Defects, Maintenance Profiles and Manuals, Maintenance Report Writing, Specification Writing, budgeting for maintenance.
11. **Quality Control and Management in Construction** 2
 Definition of Quality and Quality Control, the need for Quality control and specification Writing, elements of Quality, Factors affecting Quality (from human and material perspectives), Control measures in Concrete Blocks, Mortars, Ceiling, Roofs, etc, volume batching, weight batching, cement: sand: coarse aggregate ratio, Testing of materials (cement, sand, reinforcement, rods, wood, concrete using rebound hammer, sampling, etc, Quality control from tendering procedure through selecting of contractor, Quality Control from recruitment of workers and regular/commitment supervision, Model for Quality Assurance.

12. Project/ Dissertation	Each candidate is expected to work on an independent project involving practical and scientific investigations on problems facing the Nigerian Construction Industry	4
Total		26

Master in Quantity Surveying (Construction Economics Option)

	Course Title	Units
1.	Advanced design economics and cost planning Factors determining cost of projects. Cost planning theory. Modern cost modelling techniques and the application of computer. Improved cost planning techniques as a more valuable contribution to construction project design and construction process, value engineering. Life cycle of building,	3
2.	Cost Control Theory and Practice Cost control theory and practice in design and construction. Critical examination of client and contractor cost control systems. Failure and success of reactive cost control systems. Investigation of the briefing process and early design and cost advice for construction projects. Application of construction psychology to the briefing process.	3
3.	Applied Economic Theory in Construction Review of Price determination theory and application to construction Market structure and construction price determination Competitive strategy of companies Macro-economic theory of construction	3
4.	Value Engineering/ Analysis Evaluation of importance of value to client, assessment of value criteria for specific projects, process of client briefing and quality modelling, Benefits of integrated decision-making and its facilitation in projects. Value improvements (Benchmark and Measurement improvement), Techniques in use in the Identification of function and prioritizing of requirements	3
5.	Engineering and Project Economics Time value of money. Investment appraisal techniques Feasibility studies. Critical study of contemporary evaluation techniques such as D.C.F., cost-benefit analysis, sensitivity analysis etc. Risk analysis and management.	3

6.	Lean Construction Theory and Application Critical examination of lean theory and its importance. History. Theory and practice worldwide and the state of the art in the local construction environment	3
7.	Project Financing Sources of financing of capital projects. The nexus of project characteristics and funding sources and strategies. Impact of financial and economic reforms on funding of capital projects. Multilateral funding organizations-Security, etc	3
8.	Quantitative and Qualitative Research Methods Topic identification; preparation, presentation and critical evaluation of research proposal, literature search, review and analysis. Research design - evaluation of different research designs - experimental, historical, descriptive, correlational, causal, comparative, analytic and systematic approach. Data collection - tests, interests, opinion surveys, records, attitude, scale, questionnaire and interview. Data analysis - chi-square, t-tests, correlation, ANOVA, multiple regression, logistic regression, factorial design and path analysis. Research Reporting - Critical evaluation of scholarly journal articles, thesis and published works. Writing papers for publication. Research management - planning and organising, time management, managing your supervisor, research group activity, and wider networking, communications.	3
9.	Master's Thesis Research Project	4
	Total	28

M.Sc/M.Tech Quantity Surveying (Commercial Management)

	Course Title	Unit
1.	Competitiveness in Contracting Business Theory of competition. MNES in contracting business	3
	Construction Risk Management General theories of risk and decision making. The nature of decision and the criteria upon which decisions re made. The nature of risk; including the relationship between risk and uncertainty, reward, value and premiums together with their calculation. Approach to risk identification, evaluation, assessment, allocation and management, Approaches to decision-making. Project procurement, funding and contractual division of project risk. Tools and techniques for decision-making and risk analysis.	2
2.	Project Planning and control	3
3.	Advanced Estimating and Tendering A critical review of the Estimating & Tendering processes. Computation of unit rates for complex building and civil engineering works. Preparation of sub-contractors quotations – mechanical and electrical	3

works, material manufacturing firms. Preparation of schedule of materials, labour and plant items.

4.	Negotiation Creating the climate, different styles of negotiation; tactics; Bidding; bargaining and reaching settlement	2
5	Plant and Equipment Management Construction Equipment Management: Identification-planning-equipment management in Projects- Maintenance Management- Replacement-Cost Control of equipment-Depreciation Analysis-Safety Management Equipment of Earthwork: Fundamentals of earthwork operations, Earth moving operations, Types of Earthwork Equipment, Tractors, Motor Graders, Scrapers, Front end Waders, Earth Movers. Other Construction Equipment: Equipment for dredging, Trenching, Tunneling, Drilling, Blasting-Equipment for compaction, Erection Equipment, Types of pumps used in Construction, Equipment for Dewatering and Grouting, Foundation and Pile Driving equipment. Materials Handling Equipment: Forklifts and Related Equipment, Portable Material Bins, Conveyors, Hauling Equipment Equipment for production of aggregate and concreting: Crushers, Feeders, Screening Equipment, Handling Equipment, Batching and Mixing Equipment, Hauling, Pouring and Pumping Equipment, Transporters	2
6	International Dimensions in Construction	2
7	Quantitative and Qualitative Research Methods	3
8	Master's Thesis Research Project	4
	Total	24

M.Sc/M.Tech Quantity Surveying (Professional Practice Management)

	Course Title	Units
1	Quantity Surveying Practice and procedure Setting up and operating consultancy practice. Strategic plans for firms, Office administration Types of business organizations in consulting practices Growth and development factors in consulting practices History of practices in Nigeria Global comparison of mortality rates of consulting firms	3
2	Marketing of professional Services and Client Management Analysis of the Nigerian economy and the Construction Industry Nigerian construction markets and market trends Sourcing of jobs Marketing-strategic analysis, segmentation targets and strategies	3

	Selling	
	Application of marketing in professions and construction – professional firms and contracting organizations, The general business environment within which the construction industry operates; an introduction to marketing and business planning, with particular reference to the construction industry.	
3	Organizational Culture and Behaviour	2
4	Contract Administration	3
	Pre-contract cost control – cost indices, cost analysis, preliminary estimate, cost planning, cost checking. Contractor pre-qualification, estimating and bidding strategies, tendering procedure and contractual arrangement, tender evaluation and reporting, cash flow forecast, post-contract cost control and reporting system, life cycle costing in construction, contractual communication and relationships in construction	
5	Ethics in Professional Practice	2
	Due process and due diligence. Principles of transparency and accountability. Corruption in construction Web of corruption. International effort at eradicating corruption. Whistle blowing, etc Professional code of conduct Regulatory bodies and implications for practice of the profession	
6	Quality Control and Management	2
	Total quality management , Quality assurance, International Standard organizations, Nigerian Standard organizations . The application and adaptation of B.S.5750 (and equivalent I.S.O) to the building process; quality systems in building design, quality systems in building construction.	
8	Negotiation Skills	2
	Creating the climate, different styles of negotiation; tactics; Bidding; bargaining and reaching settlement	
9	Quantitative and Qualitative Research Methods	3
	Master’s Thesis Research Project	4
	Total	24

M.Sc/M.Tech Quantity Surveying (Construction Project Management)

	Course Title	Units
1	Leadership Principles Applied to Construction	3
	Group Dynamics. Leadership principles applicable to organizations. Goal setting. Motivation theories The place of the individual within the organisation; the nature of the company with particular reference to parameters of success and models	

of organisations; project strategy, objective and roles.

2	Construction Resources Management	2
	Management of construction resources: Money, Materials, Machine, Manpower etc	
3	Time Management in Construction	3
	Planning procedures, scheduling techniques - critical path analysis, precedence diagrams, time/location diagrams, line of balance, milestone planning; progress of works	
4	Quality Control and Management in Construction	3
	Total quality management, Quality assurance, International Standard organizations, Nigerian Standard organizations. The application and adaptation of B.S.5750 (and equivalent I.S.O) to the building process; quality systems in building design, quality systems in building construction.	
5	Project Performance Measurement	2
	Introduction to construction productivity analysis and performance management. Life cycle of performance measurement system. Balance Score card. Key performance indicators-Factors affecting construction productivity. On-site factors-job conditions, preplanning management coordination, human factors, equipment utilization, material handling, site organization, work environment (temperature, humidity and wind. Off-site factors – government regulation, financial status organization land contractual constraints. Supplies etc. Direct productivity measurement; production units/input unit. Indirect productivity measurement – work sampling five minute rating, time-motion study, etc. Construction productivity improvement – constructability study, selection of designer contractor, and construction measure firm etc. Construction stage-data gathering for on site productivity improvement; preplanning for on-site improvement, Operation modelling – use of operation modeling for productivity	
6	Human Resources Management	2
	Understanding Organisations, Organizational Culture, Employee motivation and human relations, Manpower Planning, recruitment, selection and engagement of personnel. Education and training, safety, health and welfare, industrial relations.	
7	Negotiation Skills	2
	Creating the climate, different styles of negotiation; tactics; Bidding; bargaining and reaching settlement	
8	Quantitative and Qualitative Research Methods	3
9	Master's Thesis Research Project	4
	Total	24

M.Sc/M.Tech Quantity Surveying (Construction Law and Dispute Resolution)

	Course Title	Units
1	Elements of law and its administration Law as seen by laymen and professionals Sources of Nigerian law Administration of the judicial systems Judicial personnel Elements of court processes and requirements for evidencing	3
2	Law of contract and tort Principles of the law of contract. Some features of standard forms used in construction and engineering. Negligence in the construction context, remedies for breach of contract, litigation, Alternative Dispute Resolution case studies arbitration prediction conciliation, employment law. Fundamental legal concepts and legislation relating to real property. Legal aspects relating to ownership and transfer of estates and interests in land legislation related to the sale and purchase, lease conveyance.	2
3	Standard forms of construction contracts The course has comprehensive commentary on different standard forms of contract such as JCT, NEC, FIDIC, ICE etc Forms	3
4	Construction Claims Deals with claims as unavoidable construction project problem Claims initiation, preparation, presentation, negotiation etc	3
5	Case law in Construction Critical analysis of construction related cases decided by courts both locally and internationally	2
6	Dispute Resolutions Examination of dispute resolution strategies including litigation and all alternative dispute resolution strategies with their peculiarities and uses	2
7	Negotiation Skills Creating the climate, different styles of negotiation; tactics; Bidding; bargaining and reaching settlement	2
8	Quantitative and Qualitative Research Methods	3
9	Master's Thesis Research Project	4
	Total	24

M.Sc/M.Tech Quantity Surveying (Infrastructure Cost Management)

	Course Title	Units
1	<p>Elements of Construction Technology of Infrastructure projects</p> <p>The detailed examination of the technology and construction of all classes of infrastructure projects Materials, plant and equipment for these classes of project</p>	3
2	<p>Estimating and tendering for infrastructure projects</p> <p>Applying estimating theory to the estimation and tendering for infrastructure projects</p>	3
3	<p>Engineering, Procurement and Construction Contract</p> <p>Critical examination of the EPC contract especially in the process industry-Characteristics, pricing , legal issues, risk etc</p>	3
4	<p>Maintenance Management of Infrastructure projects</p> <p>Deals with maintenance of civil engineering infrastructure.</p>	2
5	<p>Construction Resources Management</p>	2
6	<p>Quality Control and Management</p> <p>Total quality management , Quality assurance, International Standard Organizations, Nigerian Standard Organizations. The application and adaptation of B.S.5750 (and equivalent I.S.O) to the building process; quality systems in building design, quality systems in building construction.</p>	2
7	<p>International Dimensions in Construction</p> <p>Economic development patterns and the industry. Multinational Enterprises (MNE) theory and its application to international construction. Financing and management of International projects. International Construction in developing countries. Development of Construction Management Skills in developing countries. Institutional dimensions.</p>	2
8	<p>Quantitative and Qualitative Research Methods</p>	3
9	<p>Master's Thesis Research Project</p>	4
	<p>Total</p>	24

Electives (6 Units of Electives) All options/ specialization may select courses from the under listed courses

Course Title	Units
Project Psychology	2
Strategic Planning in Construction	2
International Dimensions in construction Economic development patterns and the industry. Multinational Enterprises (MNE) theory and its application to international construction. Financing and management of International projects. International Construction and/in developing countries. Development of Construction Management Skills in developing countries. institutional dimensions.	2
Construction Estimating and Logistics. Cost control at all levels of construction process Theory and practice of construction project bidding using statistical concepts of probability and computer applications	2
Introduction to methods analysis and cost estimating for general construction projects. Contract law and Administration Principles of the law of contract. Some features of standard forms used in construction and engineering. Negligence in the construction context, remedies for breach of contract, litigation, Alternative Dispute Resolution, case studies arbitration prediction conciliation, employment law. Fundamental legal concepts and legislation relating to real property. Legal aspects relating to ownership and transfer of estates and interests in land legislation related to the sale and purchase, lease conveyance.	2
Project Risk Management Sources of Risks Identification and classification of risks Quantification of risks Different method of risks analysis <ul style="list-style-type: none"> ○ Probability theory ○ Sensitivity analysis ○ Monte Carlo simulation ○ Utility theory ○ Risk allocation 	2
Advanced Project Management An overview of contract procurement systems and the integration of project management. Definition and approach to construction project management. Conflict of professional roles and the integration of project management. Organization structure relevant to project management. Environmental effects and project characteristics. Structure of clients and professional organization. Dispute and conflict resolution, leadership. Team building	2

power and the project manager. Decision making and the project managers.

Operations Research Application

2

Problem solving case studies of complex construction activities using linear programming – simplex methods, Transportation problem. Inventory Queuing theory and other quantitative methods. Simulation, computer applications with specific reference to the construction industry. A critique of their uses and possible suggestions.

Financial Management in Construction

2

Importance of financial management to project management, evaluation of the significance of financial matters in decision making by all participants in the project process, process of financial reports, analysis, Financial strategies and instruments for ensuring the solvency and sustainability of corporate business ventures. Methods of raising capital and the issue in portfolio management in the light of the risk and rewards associated with investment initiatives, Project financing options (private finance and joint venture initiatives). Company financial structured depreciation, Budgeting, Cash flow, Lock-up, working capital, costs and break-even Analysis. . Cost control, variance analysis. Time -value of loans, methods of loan renegotiation and rescheduling.

Project Performance Measurement

2

Introduction to construction productivity analysis and performance management. Life cycle of performance measurement system. Balance Score card. Key performance indicators-Factors affecting construction productivity. On-site factors-job conditions, preplanning management coordination, human factors, equipment utilization, material handling, site organization, work environment (temperature, humidity and wind. Off-site factors – government regulation, financial status organization land contractual constraints. Supplies etc. Direct productivity measurement; production units/input unit. Indirect productivity measurement – work sampling five minute rating, time-motion study, etc. Construction productivity improvement – constructability study, selection of designer contractor, and construction measure firm etc. Construction stage-data gathering for on site productivity improvement; preplanning for on-site to improvement, Operation modelling – use of operation modeling for productivity

Project Finance and Accounting

2

Introduction to financial and management accounting, the balance sheet, profit measurement, cash flow statements; financial analysis, cost classification, budgeting, working capital investment analysis, understanding construction company accounts, property and investment theory, project finance – sources of finance.

6.21 INSTRUMENTS OF ACCREDITATION

6.21.1 INTRODUCTION

The term **quality** simply means fitness for purpose. It means that a product or service fits the purpose according to predetermined standards. Quality as fitness for purpose envisions quality in terms of fulfilling a programme's requirements, needs or desires and is usually based on the ability of an institution to fulfill its mission or a programme of study to fulfill its aims.

Quality is being used to designate the level of acceptable standard in almost every industry such that quality assurance has become a metaphor for the management of the maintenance of quality of goods or services at a good standard. Historically, quality was maintained through control mechanisms. However, in recent years, the practice of quality control has progressively moved from an ex post activity to a more proactive process, known as quality assurance. The industry developed the concept of *total Quality management (TQM)* to capture three key components of quality, namely: *quality control*, *quality assurance* and *continuous monitoring and evaluation*. TQM is not industry-specific; rather is a phenomenon or practice that has universal applicability wherever services are rendered or products produced.

In the Nigerian University System, one of the functions of the National Universities Commission, as the regulatory agency of the programmes (undergraduate and Post-Graduate) offered in the entire University system. As with industry, quality assurance in the university system can be both internal and external. The external mechanism is constituted by accreditation conducted by the NUC that regulates programmes by ensuring that the universities establish only programmes for which they have the requisite curriculum as well as human and material resources. The structure of the internal institutional mechanism is comprised of the senate. The external examination system provides additional assurance that the quality of academic programmes of the university is acceptable to academic peers across the university system.

Accreditation of academic programmes entails peer assessment of the programme against pre-determined standards. The standards are often referred to as Minimum Academic Standards and provide the benchmarks against which the quality of the programme is measured.

The Quantity Surveying Programme is one of the postgraduate programmes offered in most Universities in Nigerian. This programme aims at producing quality professional managers and academics for both the public and private sectors of the economy. In order to achieve the aims of establishing this programme and to assess the characteristics of the programme, the accreditation criteria and weight stated below should be used in the assessment of the Postgraduate programme

6.21.2 CRITERIA FOR ASSESSMENT (Total:100 points)

a) **ACADEMIC CONTENT (22)**

- i) **Clarity of Mission, Philosophy, Aims and Objectives of Programme (4):**
The mission, Philosophy, aims and objective of the programme must be explicitly expressed and clearly defined.
- ii) **Admission Requirements (3)**
The degree to which students admitted into the programme meet prescribed Minimum Admission Requirements should be assessed.
- iii) **Academic regulations (3)**
The rules and regulations guiding the conduct of the M.Sc Programme should be explicitly stated in a postgraduate prospectus. The students' level of awareness of the programme's rules and regulations should be gauged as well.
- iv) **The Curriculum (12)**
The curriculum of the Postgraduate Quantity Surveying programme should state very clearly the cognitive, affective and psychomotor skills to be acquired by the students. The curriculum should have adequate mechanisms to properly prepare students to adapt to the practical world of Quantity Surveying. The adequacy of the curriculum content to produce competent Quantity Surveyors should be assessed.

b) **ASSESSMENT (10)**

- i) **Course Work (3)**
Assessment should be made on the efficacy of the course work mode of assessment.
- ii) **Students project/thesis (3)**
The standard of essays, examinations, tests and projects should be evaluated to ascertain the quality of the programme.
- iii) **External Examination System (4)**
The efficiency of the external examination system should be ascertained. The quality of the external examiners used should be assessed through the external examiner's Report.

c) **STAFFING (30):**

a) **Academic staff (28)**

The quality and credibility of the academic staff should be examined, using the following indices.

- i) **Staff: Students Ratio (1:12) (10)**
- ii) **Staff Mix of 20:30:50 (5)**

- iii) **Academic staff with Doctorates (7)**
Percentage of faculty with a doctoral degree. A minimum of 75% of the teaching staff should have doctorate degree or equivalent in relevant disciplines.
 - iv) **Staff Development (5)**
There should be proven evidence of a well established staff development programme. The accreditation panel should determine the percentage of staff that have benefited from the scheme.
- b) **Non-Teaching Staff (2)**
The quality of the non-teaching staff available for the programme should be assessed.
- c) **COURSE DELIVERY AND FACILITIES**
- i) **Course delivery (11)**
The modes of course delivery such as lectures, seminars, group projects, and held work in-company training, etc, have been adequately used in training the Postgraduate Urban and Regional Planning students. The Panel should assess this and measure the effectiveness and adequacy of the various course delivery modes.
 - ii) **Facilities (5)**
Assessment should be made on the degree of availability of facilities such as classrooms, seminar rooms, lecture office accommodation, ICT tools and equipment.
 - iii) **Library (5)**
The quality, relevance, currency and quantity of books and international academic and scholarly journals available for the programme should be assessed to determine their adequacy or otherwise.
 - iv) **Funding (3)**
The adequacy of funds available for the programme should be assessed. How far is the Postgraduate School/School of Postgraduate Studies able to assist indigent students financially.
- d) **EMPLOYERS/ALUMNI RATING (14)**
- i) **M.Sc Alumni Activity (3)**
Availability of feedback from Alumni, employers and sponsors should be obtained and used to assess the level to which the programme has produced the required quality of managers. Employability of graduates; ability to secure employment for their graduates.
 - ii) **Placement Success (2)**
The percentage of preceding year graduates that gained employment with or without the help of career advice.

iii) **Career Progress (2)**

The degree to which alumni have moved up the career ladder three years after graduating. Progression is measured through changes in level seniority and the size of the company of organization in which they are employed.

iv) **International Students (4)**

The percentage of international students in programme.

7. SURVEYING AND GEOINFORMATICS

7.0 POSTGRADUATE PROGRAMMES IN SURVEYING AND GEOINFORMATICS

7.1 INTRODUCTION

Surveying & Geoinformatics is the scientific discipline that deals with the creation of *Geospatial Information Products* (GIPs) and systems needed to **simplify, improve reliability, and reduce costs** of a multitude of land & land-related processes, operations or procedures including planning, management and administration of projects in Civil Engineering, Architecture, Physical Planning, National Defence, Archaeology, Space Exploration, Mining, Navigation, Oceanography, Tourism, Land Use & Allocation, Land Administration, Civil Aviation, and Political Administration at all levels of Government, to mention just a few. The GIPs contain the following information about real-world entities: coordinates of points, lengths of lines, area of surfaces, volume of figures, maps (topographic and thematic), images of features, lists of tabular information including names and characteristics of features, textual and historical information, graphs and diagrams. GIS is a computer-based system designed for collection, storage, processing, analysis and integrated display, presentation and communication of data and information that are tied to positions on or within the earth.

Central to the philosophy, of the Postgraduate programmes is commitment to creative excellence. To make a difference in the adaptation of the advances in Information Technology (IT) to improve continuously the level of simplification, reliability and low cost of all land and land-related operations and procedures, through research in the creation of the most effective GIP's; and thus contribute tremendously to the betterment of the conditions of man – the explorer, the navigator and the developer of the planet earth in the minutest details.

To attain this, there is to be further development of the spirit of inquiry in the postgraduate students. This shall be achieved through training in research carried out in an atmosphere of intellectual independence, and individual creativity combined with a strong sense of teamwork. The concept of scientific philosophy /method shall prevail. Graduates of the Master's and Doctorate Programmes shall be empowered to make effective contributions to the solution of the problems of national and international communities of Surveying & Geoinformatics.

7.2 GENERAL REGULATIONS

The National Universities Commission (NUC), as a regulatory agency for University Education in Nigeria, has as one of its mandates, the definition and maintenance of academic standards. The Commission has in the past organized the definition of Minimum Academic Standards (MAS), and subsequently, accreditation for all approved undergraduate programmes offered in Nigerian Universities. For postgraduate programmes, NUC has commenced the process of defining benchmarks and minimum academic standards (BMAS) as a follow up to the success recorded in the undergraduate programmes. Following the experience gathered in the development of the pilot BMAS for the Master's Degree in Business Administration (MBA) programmes, this BMAS for the programmes in the specialization areas of Surveying & Geoinformatics is now put in place; thereby paving the way for future accreditation of all such postgraduate programmes offered in Nigerian Universities. The benchmark statements contained

herein, are descriptions of the minimum academic requirements each University is to attain. Individual Universities may modify them provided they do not go below the levels implied by the benchmarks.

- **Postgraduate Diploma (PGD)**
- **Master of Geoinformatics (MGIT),**
- **Master of Science (M.Sc Professional),**
- **Master of Science (M.Sc Academic) and,**
- **Doctor of Philosophy (Ph. D.)**

Specifically, the benchmark statements harmonize, where possible, the degree nomenclatures taking into consideration the current global practices and the duration of study.

They also set the criteria for the following components of the programmes: Philosophy, Aim & Objectives, Admission Requirements, Academic Standards, Resource Requirements for Teaching and Learning, Learning Outcomes, Course Structure, and Programmes Accreditation.

The course structure and contents can be enhanced and adapted to reflect preferences and emphasis for each programme.

7.2.1 ACADEMIC STANDARDS

a) Academic Regulations

To attain the academic standards envisioned in the objectives of the programme, the following set of academic regulations shall be complied with:

i) Academic Session

An academic session consists of two semesters. Each semester normally comprises 15 weeks of teaching and two weeks for examinations. Teaching includes lectures, tutorials, field and laboratory practicals and studio work

ii) Course Unit System

All Postgraduate Programmes shall be run as Course Unit System. All courses should therefore be sub-divided into more or less self-sufficient and logically consistent packages (Modules) that are taught within a semester and examined at the end of that particular semester. A weight called *credits* or *units* is attached to each course module.

iii) Definition of Credit or Unit

Credit units are weights attached to a course. One credit unit is equivalent to:

- * one hour per week per semester of 15 weeks of lectures
- * three hours per week per semester of 15 weeks' tutorial
- * three to five hours per week of 15 weeks' laboratory/field work/studio.

b) **Programme Requirements**

i) **Registration Procedure**

- A Student shall normally complete registration for courses for the semester not later than two weeks after the start of the semester.
- A registered Student cannot withdraw from a course after seven weeks of lectures in a given semester.
- A student who fails to sit for examination for which he/she registered is deemed to have failed the course.
- A Student who fails to sit for examination in more than two courses at the end of a given semester without reasons acceptable to the University Senate shall be deemed to have voluntarily withdrawn from the programme.

a. **Good Standing**

To be in good standing, a student must in each semester have a cumulative Grade Point Average (CGPA)* of not less than 3.00

Definition of Cumulative Grade Point Average (CGPA)

- The grade point (GP) earned by a given grade in a course is the product of the grade point equivalent (GPE) of the given grade and the credit units assigned to the course.
- The grade point average (GPA) is the sum of the GPs obtained in all courses taken in a semester divided by the sum of the credit units assigned to those courses.
- The Cumulative Grade Point Average (CGPA) is the GPA computed for all courses taken by the student since entry into the programme.

b. **Withdrawal**

Candidates with less than 3.00 CGPA shall remain in the programme for the 1st semester but shall be withdrawn if he/she fails to attain 3.00 CGPA at the end of the second semester.

c. **Attendance**

In order to be eligible for examination in a particular course, a student shall have attained a minimum of 75% of the total periods of formal instructions delivered for the course.

d. **Course Evaluation**

In the Postgraduate Diploma Programmes, assessment of students' achievements shall be based on:

- i) Course Examination
- ii) Term papers/Seminars;

iii) Other assignments.

(e) **Continuous Assessment**

Continuous assessment shall be done through essays, tests, term papers, tutorial exercises, quizzes and homework.

Scores from continuous assessment shall constitute 30% of the final marks for courses which are primarily theoretical.

(f) **Examination, Grading Procedure & Results**

i) **Examinations**

a) In addition to continuous assessment, final examination shall be given for every course at the end of every semester.

The total scores obtainable for every course continuous assessment and final examination is 100% and shall have the proportion shown in the table below:

Assessment components	Percentage weight for Regular course	Purely Practical Course
Continuous Assessment	30 - 40	100
Final Examination	70 - 60	0
Total	100 100	100

b) Each course shall normally be completed and examined at the end of the semester in which it is offered.

ii) **Pass Mark**

The minimum pass mark in a course shall be 50% but for thesis pass mark is 60 %.

iii) **Grading System**

Grading of courses shall be done by a combination of percentage marks and letter grades translated into a graduated system of Grade Point Equivalents (GPE). For the purpose of determining a student's standing at the end of every semester, the Grade Point Average (GPA) system shall be used. The GPA is computed by dividing the total number of credit points (TCP) by the total number of units (TNU) for all the courses taken in the semester. The credit point for a course computed by multiplying the number of units for the course by the Grade Point Equivalent of the marks scored in the course. Each course shall be graded out of a minimum of 100 marks and assigned appropriate Grade Point Equivalent as in the following table:

Credit Units	% Scores	Letter Grades	Grade Points (GP)
Vary according to contact hours assigned to each course per week per semester, and according to load carried by students	70 – 100	A	5
	60 – 69	B	4
	50 – 59	C	3
		F	0

iv) **Presentation of Results**
Results from the Postgraduate School Board of Examiners shall be presented to Senate for approval.

v) **Release of Results**
Results shall be released/published not later than 2 weeks after approval by the Senate.

g) **External Examination System**
The external examination system shall be used at the end of the Postgraduate programmes to assess the courses, projects and theses.

The project shall be subject to oral examination where the student is required to show evidence that he/she carried out the work and had pertinent knowledge of the subject matter.

The M.Sc./Ph.D candidates shall be required to defend their thesis orally (vivaVoce) before a panel of Internal and External Examiners.

RESOURCE REQUIREMENTS FOR TEACHING AND LEARNING IN THE PROGRAMME

a) **Academic Staff**

i) **Teacher/Students Ratio**
The staff to students ratio for Postgraduate programmes is 1 to 10 for effective teaching and learning.

ii) **Academic Staff Work-Load**
An academic staff shall carry a maximum load prescribed by the senate of the university for lecturers and tutorials.

b) **Non-Academic Staff**
The services of supporting staff, which are indispensable in the proper running of the programme as well as for administration, are required. It is important to recruit very competent senior technical staff to maintain teaching and research

equipment. Universities should pay attention to optimum proportioning of the non-academic staff to avoid redundancy and overstaffing.

- c) **Computer Literacy**
With the computer age and application of information technology, both academic and non-academic staff should be sufficiently computer literate.
- d) **Students' course Evaluation**
There is a need to have students to evaluate the course at the end of the semester to know how well the course has been delivered and also for the general improvement of the course. The Dean of PG School should set up the modalities for carrying out the evaluation.

7.3 POSTGRADUATE DIPLOMA PROGRAMMES (PGD)

7.3.1 PHILOSOPHY

The Philosophy of the Postgraduate Diploma Programme is to provide a vehicle of conversion of graduates in disciplines cognate to Surveying and Geoinformatics into the Surveying profession.

7.3.2 AIM AND OBJECTIVES

The following general and specific objectives are to be pursued: these are:

- i) to foster deeper understanding of the basic concepts and principles of Surveying & Geoinformatics;
- ii) to promote increasing ability of the postgraduate students to apply the basic principles to the solution of new problems in the discipline;
- iii) to equip postgraduate students with the knowledge and skills that will enable them to practise Surveying and Geoinformatics efficiently; and
- iv) to produce surveyors and geoinformatics managers with entrepreneurial skills and leadership qualities.

7.3.3 ADMISSION REQUIREMENTS:

- a) **Basic Admission Requirements**
The minimum Admission Requirements for PGD programme are as follows:
 - i) Matriculation requirements of individual Universities, including Mathematics and English Language;
 - ii) Criterion (i) above with B.Sc honours or higher degree in discipline cognate to Surveying & Geoinformatics e.g. Mathematics, Physics, Computer Science and Geography(with Mathematics Courses) obtained from a recognised University.
 - iii) A candidate who meets Criterion (i) above with HND Upper Credit minimum from recognized institution may also be considered. However, such candidate must enroll for and pass prescribed remedial courses in physics and mathematics.

b) **Areas of Specialization**

The PGD is conceived, in the main, as a conversion programme for those wanting to change career or from Technical to professional line in Surveying & Geoinformatics, There is no area of specialization at the Postgraduate Diploma level.

c) **Modes of Study**

The following modes of study shall be followed:

- (i) By coursework with externally moderated written examinations in registered courses and project reports;
- (ii) By Full-time or Part-time study.

d) **Duration of Programme**

The duration of the programme is as follows:

- i) Full-Time PGD is for a minimum of three (3) Semesters;
- ii) Part-Time PGD is for a minimum of four (4) semesters and a maximum of six (6) semesters.

In all cases, extension beyond the stated maximum period must be approved by the Senate of the University.

e) **Requirements for Graduation**

A candidate must have fulfilled the following conditions to be awarded the Postgraduate Diploma:

- (i) Pass a minimum of 34 credit Units made up as follows:
 - (a) 20 Units of Core Courses;
 - (b) 10 Units of Elective Courses;
 - (c) 4 Units of Projects

Candidates who are deficient in mathematics and physics will take and pass additional remedial courses prescribed by the departmental PG Committee.

f) **Domiciliation of the Programmes**

The Postgraduate programmes shall be domiciled in the relevant Department, depending on the University. Institutes can also award Postgraduate Diplomas (PGD).

g) **Students Enrolment:**

This should not normally be more than 40% of Postgraduate enrolment of Department/Faculty.

h) **Postgraduate Diploma Classification**

The determination of the PGD shall be based on the Cumulative Grade Point Average (CGPA) earned at the end of the programme.

Cumulative Grade	Class of Diploma
4.50 - 5.00	Distinction
3.50 – 4.49	Credit
3.00 – 3.49	Merit/Pass
Below 3.00	Fail

i) **Staffing**

There should be a minimum of 8 full time staff on ground in a Department. The teacher should have at least an M.Sc. degree with at least three years university teaching experience and rank not lower than lecturer II.

7.4 MASTER OF GEOINFORMATICS (MGIT)

7.4.1 PHILOSOPHY

The Philosophy of the MGIT programme is to design a curriculum that can equip graduates of tertiary Institutions in Engineering, Science, Medicine, Business Administration and Social Sciences with the knowledge and skills in Geoinformatics to enhance their competence in the application of modern GIS Technology in the work place.

Programmes will empower graduates to make effective contributions to the solution of the problems of national and international communities of Surveying & Geoinformatics.

7.4.2 AIMS AND OBJECTIVES

The following specific objectives are to be articulated:

- i) to foster a deeper understanding of the basic concepts and principles of Surveying & Geoinformatics;
- ii) to promote increasing ability of the postgraduate students to apply the basic principles to the solution of new problems in the discipline;
- iii) to produce Geomatician (Geoinformation Managers) who are mindful of accepted norms, ethics and applications for solving local and national problems;
- iv) to produce geoinformatics managers with entrepreneurial skills and leadership qualities.

7.4.3 ADMISSION REQUIREMENTS:

- a) The minimum Admission Requirements for MGIT programme are as follows:
- ii) Matriculation requirements of individual Universities, including Mathematics and English Language;
 - iii) Criterion (i) above with B.Sc honours or higher degree in disciplines such as Engineering, Mathematics, Computer Science, Physical Sciences, Geography, Town Planning, Forestry, Estate Management, Banking and Finance, Insurance and actuarial sciences, obtained from a recognized University.
- b) **Areas of Specialization**
The MGIT is conceived, in the main, as a professional programme for those wanting to acquire graduate level skills in Geoinformatics. There is no specialization at the MGIT level.
- c) **Modes of Study**
The following are the modes of study:
- (i) By coursework with externally moderated written examinations in registered courses and project reports.
 - ii) By Full-time or Part-time
- d) **Duration of Programme**
The duration of the programme is as follows:
- i) Full-Time MGIT is for a minimum of three (3) Semesters.
 - ii) Part-Time MGIT is for a minimum of four (4) semesters.
- e) **Requirements for Graduation**
A candidate must fulfill the following conditions to be awarded the MGIT Degree:
- (i) Pass a minimum of 36 credit Units made up as follows:
 - (a) 24 Units of Core Courses;
 - (b) 8 Units of Electives Courses;
 - (c) 4 Units of Projects
- f) **Domiciliation of the Programme**
The MGIT programme shall be domiciled in the relevant Department or Faculty depending on the University. Institutes and Units are not permitted to run MGIT Programme.
- g) **Students Enrolment**
This should be based on the carrying capacity of the Department/Faculty.

7.4.4 ACADEMIC STANDARDS

a) **MGIT Results' Classification**

The determination of the PGD shall be based on the Cumulative Grade Point Average (CGPA) earned at the end of the programme.

Cumulative Grade Point Average	Class of Diploma
4.50 - 5.00	Distinction
3.50 – 3.49	Pass
Below 3.00	Fail

b) **Staffing, Supervision & Teaching**

There should be a minimum of 8 full time staff on ground in a Department. The teacher should have a Ph.D degree with at least one year postdoctoral university teaching experience.

Only holders of Ph.D degree with a minimum of one year Postdoctoral experience shall supervise MGIT project. Other academic Standards are stated in Section 6.21

7.5 MASTER OF SURVEYING & GEOINFORMATICS (M.Sc.P, Professional) PROGRAMME

7.5.1 PHILOSOPHY

This programme is designed for professionals in Surveying and Geoinformatics who want to acquire and apply modern skills deriving from the application of (ICT) in providing geospatial solutions to the problems of physical development.

7.5.2 AIM AND OBJECTIVES

The programme has the following general and specific objectives:

- i) to foster a deeper understanding of the basic concepts and principles of Surveying & Geoinformatics;
- ii) to promote increasing ability of the postgraduate students to apply the basic principles to the solution of new problems in the discipline;
- iii) to produce Surveyors and Geoinformatics Managers with entrepreneurial skills and leadership qualities;
- iv) to provide long-term training facilities (hardware, software and instruction) needed for improving and upgrading the levels of existing and potential Spatial information manpower in various establishments, for improved productivity and performance.

7.5.3 ADMISSION

a) **Basic Admission Requirements for M.Sc. Professional Programme**

The programme is open to candidates who must possess the following qualifications, and who may in addition be required to satisfy the department in a selection process.

- i) Matriculation requirements of individual Universities which are 5 'O' level credits including Mathematics and English;
- ii) Criterion (i) above with B.Sc. Honours (not below 3rd Class) degree in Surveying & Geoinformatics from a recognized University;
- iv) Criterion (i) above with a PGD Surveying & Geoinformatics with at least a merit level pass (i.e. 3.0 of 5.0 scale) or 50% on weighted percentage average.

b) **Areas of Specialization**

The following general areas can be re-organized to create areas of specialization:

- a) Geospatial Information Systems (GIS);
- b) Land Surveying & Land Information Management;
- c) Hydrographic Surveying & Marine Geodesy;
- d) Geodesy and Geodynamics;
- e) Photogrammetry and Remote Sensing;
- f) Digital Mapping & Cartography

c) **Duration of Programme**

- i) The full time M.Sc Professional Programme is for a minimum of 3 semesters;
- ii) Part-time master's programme is for a minimum of 4 semesters.

d) **Requirements for Graduation:**

To be awarded an M.Sc. Professional degree, a candidate must pass a minimum of 34 credit units made up as follows:

Core compulsory courses general	-	20
Elective courses	-	8
Project	-	6
Total	=	34 units

A student shall carry out research in relevant areas of specialization and submit an acceptable Research Project (6 credit units compulsory).

A student shall present at least one seminar, submit and defend a project.

e) **Domain of the Master's Programme**

The M.Sc programme should be domiciled in the Department/Faculty of the Universities. Institutes and Units should not be permitted to run M.Sc Professional Programme.

- f) **Students' Enrolment**
Students' Enrolment shall be subject to the carrying capacity of the Department/Faculty.

7.5.4. ACADEMIC STANDARDS

a) **Staffing, Supervision & Teaching**

There should be a minimum of 8 full time staff on ground in a Department. The Lecturer should have a Ph.D Degree with at least two- year- postdoctoral University teaching experience.

Only holders of Ph.D degree with a minimum of two –year- postdoctoral experience shall supervise M.Sc project.

Other academic Standards are stated in Section **6.21**

7.6 MASTER OF Science (M.Sc. Academic) PROGRAMME

7.6.1 PHILOSOPHY

The Programme is designed to produce high level manpower equipped with modern knowledge and skills for the application of (ICT) in providing geospatial solutions to the problems of physical development and research.

7.6.2 AIM AND OBJECTIVES:

The programme has the following general and specific objectives. These are:

- i) to foster deeper understanding of the basic concepts and principles of Surveying & Geoinformatics;
- ii) to promote increasing ability of the postgraduate students to apply the basic principles to the solution of new problems in the discipline;
- iii) to make the postgraduate students realize quite early that intellectual growth and subsequent success are directly related to the strength of command of the fundamental principles and on the ability to apply them successfully;
- iv) to provide training in research for future academic staff of Surveying and Geoinformatics programme;
- v) to provide training in research for future Surveying and Geoinformatics management staff to be involved in research and production in commercial and industrial ventures of national economy either in the public or the private sector.

7.6.3 ADMISSION

a) **Basic Admission Requirements for M.Sc.(Academic) Programme:**

The programme is open to candidates who possess any of the following qualifications:

- (a) B.Sc. (Surveying & Geoinformatics) degree with at least 2nd Class Lower division or equivalent from an approved University;
- (b) B.Sc. degree in subjects cognate to surveying such as: Mathematics, Engineering, Physics or Geography (with Mathematics) and, in addition, a postgraduate Diploma (PGD) in Surveying & Geoinformatics at a pass level equivalent to the cumulative point average of 3.5 and above on a 5-point scale or 3.0 and above on a 4 - point scale obtained from a recognized University.

The candidates must also satisfy the matriculation requirements of the individual Universities, and may, in addition be required to satisfy the department in a selection process.

b) **Areas of Specialization**

The following areas may be adopted or modified to create areas of specialization:

- a) Geospatial Information Systems (GIS);
- b) Land Surveying & Land Information Management;
- c) Hydrographic Surveying & Marine Geodesy;
- d) Geodesy and Geodynamics;
- e) Photogrammetry and Remote Sensing;
- f) Digital Mapping & Cartography.

c) **Duration of Programme**

- i. The full time M.Sc (Academic) Programme is for a minimum of 4 semesters;
- ii. Part-time master's programme is for a minimum of 6 semesters.

e) **Requirements for Graduation:**

To be awarded an M.Sc. Academic degree, a candidate must pass a minimum of 28 credit units made up as follows:

Core courses general	-	12
Elective courses	-	8
Research project	-	8
Total	=	28units

- A student should carry out research in relevant areas of specialization and submit an acceptable thesis (eight credit units compulsory).
- A student should present at least one seminar, submit and defend a thesis proposal.

f) **Domain of the Master's Programme**

The M.Sc programme should be domiciled in the Department/Faculty of the Universities. Institutes and Units should not be permitted to run M.Sc Programme.

g) **Students' Enrolment**

Students' Enrolment shall be subject to the carrying capacity of the Department/Faculty.

7.6.4 ACADEMIC STANDARDS

a) **Academic Staff**

Staffing

There should be a minimum of 8 full time staff on ground in a Department. The teaching staff should have Ph.D Degree with at least two years Postdoctoral University teaching experience.

Supervision & Teaching

However, only holders of Ph.D degree with a minimum of three years of postdoctoral experience shall supervise M.Sc research project. Other academic Standards are stated in Section 6.21

7.7.0 DOCTORATE (Ph.D) PROGRAMME

7.7.1 PHILOSOPHY

The Programme is designed to produce higher level manpower equipped with modern knowledge and skills for the application of (ICT) in providing geospatial solutions to the problems of physical development and research.

7.7.2 AIM AND OBJECTIVES

The programme has following general and specific objectives. These are:

- i) to foster a deeper understanding of the basic concepts and principles of Surveying & Geoinformatics;
- ii) to promote increasing ability of the postgraduate students to apply the basic principles to the solution of new problems in the discipline;
- iii) to make the postgraduate students realize quite early that intellectual growth and subsequent success are directly related to the strength of command of the fundamental principles and the ability to apply them successfully;
- iv) to provide training in research for future academic staff of Surveying and Geoinformatics programmes;
- v) to provide training in research for future Surveying and Geoinformatics management staff to be involved in research and production in commercial and industrial ventures of the national economy either in the public or the private sector.

7.7.3 ADMISSION

a) **Basic Admission Requirements for Doctoral Programme: The following are the admission requirements:**

- i. All candidates must have five credit passes including English, Mathematics and one science subject at 'O' Level;
- ii. Candidates with an M.SC. (Academic) degree with a CGPA of at least 3.5 of a 5.0 point scale or 60% weighted average;
- iii. All candidates must demonstrate adequate intellectual capacity, maturity and effective decision making and problem solving potentials possibly through a selection process.

- b) **Doctor of Philosophy (Ph.D) Programmes**
Programmes should be as specified by the individual Universities;’
- c) **Areas of Specialization**
Candidates can specialize in any of the areas of interest as in the approved programmes of individual Universities.
- d) **Duration of Programme**
 - i. A full time Doctoral programme shall run for a minimum of 6 semesters
 - ii. Part-time Doctoral programmes shall run for a minimum of 8 semesters .
- e) **Requirement of Graduation**
Doctorate (Ph.D.) programmes should primarily be by Research. However, Departmental Postgraduate Committee may prescribe some courses of not more than 12 credit Units to be taken by the students. A Doctoral (Ph.D). Thesis of 12 credit units must be defended (compulsory) before a Panel of Examiners.
- f) **Domain of the Doctoral Programme**
The Doctoral programmes shall be domiciled in the relevant Department.
- g) **Students’ Enrolment**
Students’ Enrolment shall be subject to the carrying capacity of the Department. However, a supervisor, who must possess a Doctoral (Ph.D) degree, cannot have more than 6 M.Sc./ Ph.D students concurrently.

7.7.4. ACADEMIC STANDARDS

7.7.5 RESOURCE REQUIREMENTS FOR TEACHING AND LEARNING IN THE PROGRAMME

a) Academic Staff

Staffing

There should be a minimum of 8 full time members of staff on ground in a Department.

Supervision & Teaching

Holders of Ph.D Degree with a minimum postdoctoral experience of not less than three years may teach in the Ph.D programme. However, only holders of Ph.D degree of a rank not lower than senior lecturer may supervise a doctoral thesis. Other academic Standards are indicated in Section **6.21**

7.8 GENERAL REQUIREMENTS FOR ALL POSTGRADUATE PROGRAMMES IN SURVEYING AND GEOINFORMATICS

7.8.1. ACADEMIC PHYSICAL SPACE AND EQUIPMENT REQUIREMENTS

Physical Facilities

- i) Laboratories, preparation rooms, stores, workshops, dark rooms, studios and other specialized spaces should be provided.
- ii) Computer Room, including Virtual Library facilities.
- iii) Resource Rooms to enhance academic development.

Office accommodation

The standard space requirements as shown below shall apply.

Position/Rank	m²
Professor's Office	18.50
Head of Department's Office	18.50
Tutorial Teaching Staff Office	13.50
Other Teaching Staff Space	7.00
Technical Staff Space	7.00
Secretarial Space	7.00
Seminar Space/per student	1.85

Classroom Space and examination Theatres

- * Adequate classrooms should be provided with enough chairs and tables.
- * Examination halls and theatres should be provided to minimize the rates of examination malpractice.

Equipment

For effective learning, the following equipment should be provided:

- * Scientific equipment for specific areas of specialization, the concept of central laboratories and shared facilities through linkages and collaboration should be encouraged.
- * Computers
- * Photocopying Machines
- * Video Cameras
- * Tape recorders
- * Internet and E-Mail facilities
- * Audio Visuals.

7.8.2 LIBRARY FACILITIES

There should be adequate physical and virtual library facilities. These include current journals, handbooks, textbooks, manuals and other reference materials in sufficient numbers.

7.8.3. LEARNING OUTCOMES FOR PGD, MASTER’S AND DOCTORAL PROGRAMME

Comprehensive knowledge of areas of specialization

- i) Graduates should have comprehensive knowledge of their areas of specialization, encompassing an understanding of the theoretical foundations and quantitative tools of the areas of specialization, as well as the ability to apply this knowledge to actual problems.
- ii) Graduates should be able to demonstrate problem solving capacity using multidisciplinary approaches in an innovative and creative way.
- iii) A candidate should display a comprehensive knowledge of area of specialization and should have acquired entrepreneurial skills to equip him for self sufficiency and also meet the needs of public and private sectors in Nigeria and beyond.

Problem Solving Capacity

Graduates should be able to demonstrate problem solving capacity through literal, critical, innovative and creative connections among diverse fields of study in analyzing problems using multidisciplinary approaches.

Behavioural Skills

Graduates should understand human behaviour in an organization. They should:

- * have the ability to work in a team;
- * internet effectively in group situations;
- * be deposed to mentoring and peer review;
- * be able to appreciate constructive criticism.

7.8.4. COURSE STRUCTURES

Course Structures (i.e. the course codes and course content/descriptions/synopsis should be as contained in the individual University’s programme/brochures/prospectus for the various postgraduate programmes, i.e. PGD, Masters, MSc. & Ph.D programmes.

However, for the Uniformity of course codes for transcript purposes, the following is recommended:

PGD	600 Level
Masters (Professional)	700 Level
Masters (Academic)	800 Level
Ph.D	900 Level

COURSE STRUCTURE

The courses for each level of the programmes shall be structured as follows:

- a) Core courses
- b) Electives for specialization areas

7.8.5 POSTGRADUATE DIPLOMA

(a) Core Courses 600 Level

There shall be one set of core courses for entrants who hold the Higher National Diploma in Surveying from Polytechnics, and another set for entrants who hold University degrees in cognate subjects like Mathematics, Computer Science, Physics and Geography. Those in the latter category shall be required to spend two extra semesters on remedial courses (minimum of 4 semesters for the whole programme). The former shall be called “Bridge Mode” entrants and the latter shall be called “Conversion Mode” entrants.

Course Titles	Credit Units
Use of English	2
Social Science	2
Humanities	2
Applied Mathematical Methods	2
Computer Applications	2
Adjustment Computations	2
Land Surveying	2
Terrestrial & Space Geodesy	2
Gravimetric Geodesy	2
Survey Laws & Regulations	2
Photogrammetry	2
Cartography	2
Geospatial Information Systems	2
Hydrographic Surveying	2

The high units assigned to any course under the “Conversion Mode” will have to be distributed to sub-courses of the programme.

7.8.6 MASTER’S /PhD DEGREES

(a) Core Courses

Course Titles	Credit Units
Methodology	2
Applied Mathematical Methods	2
Advanced Adjustment Computations	2
Advanced Computer Applications	2
(b) Research Project (Masters / PhD)	6/12
(c) Electives For Specialization Areas	
1. Surveying and Land Administration	
Advanced Cadastral Surveying	2
Advanced Engineering Surveying	2
Issues in Land Administration	2
Advanced Space Geodesy	2
Advanced Geospatial Information Systems	2

Advanced Mathematical Cartography	2
2. Geodesy and Geodynamics	
Advanced Space Geodesy	2
Advanced Physical Geodesy	2
Advanced Geometric Geodesy	2
Advanced Mathematical Cartography	2
Theory & Applications of Geodynamics	2
Inertial Surveying Systems	2
3 Photogrammetry & Remote Sensing	
Adv. Analytical Photogrammetry	2
Adv. Digital Photogrammetry	2
Adv. Remote Sensing	2
Adv. Cartographic Techniques	2
Adv. GIS Applications	2
Adv. Mathematical Cartography	2
4 Geospatial Information Systems	
Adv. GIS Planning & Implementation	2
Adv. GIS Applications	2
Adv. Geometric Geodesy	2
Adv. Remote Sensing	2
Adv. Mathematical Cartography	2
Adv. Digital Photogrammetry	2
5. Hydrographic Surveying & Marine Geodesy	
Adv. Onshore Hydrographic Surveying	2
Adv. Offshore Hydrographic Surveying	2
Ocean Dynamics & Coastal Erosion	2
Adv. Mathematical Cartography	2
Adv. Space Geodesy	2
Issues In Marine Geoid Determination	2
6. Cartography	
Adv. Cartographic Techniques	2
Adv. Mathematical Cartography	2
Adv. GIS Applications	2
Adv. Remote Sensing	2
Adv. Analytical Photogrammetry	2
Adv. Hydrographic Surveying	2

7.9 COURSE DESCRIPTIONS

7.9.1 CORE COURSES

(a) 700 LEVEL COURSES (PGD) (2/8 units)

Land Surveying (2 Units)

Review of methods of establishing horizontal control viz traversing, triangulation, intersection, resection, etc. Topographic heighting – bench marks, precise levelling, trigonometrical levelling, barometric heighting, etc. methods of detailed mapping. Electronic surveying and EDM equipment. Computations and setting out of Engineering works, including ranging circular transition and vertical curves. Field work in various aspects of the syllabus.

Terrestrial & Space Geodesy (2/4 units)

Principles and methods of terrestrial geodesy including computations and adjustment of geodetic observations on the reference ellipsoid. Height systems. Variations in celestial coordinates and applications to determine astronomic positions and azimuths geodetic lines. Theory of the positioning and motion of artificial earth satellites; applications to determine the positions of points on or outside the earth.

Gravimetric Geodesy

Introduction to the principles and methods of gravimetric geodesy. Definitions and realization of gravity values, gravity anomalies, geoid heights, and deflections of the vertical. The applications of artificial earth satellites (e.g. GPS Satellites) to the determination of Geodetic positions.

Photogrammetry (2/4 units)

Principles and applications of aerial and terrestrial photographs, to mapping. Study of analogue, analytical and digital photogrammetric methods.

Geospatial Information Systems (GIS) (2/3units)

Definitions of GIS. Principles and techniques of using GIS to create information products needed for simplified and effective management of land resources. Applications to navigation, transportation, engineering, forestry, etc.

Cartography (2/4 units)

Fundamentals of cartographic communication and design in map making. Map design and layout. Map Reproduction techniques. Introduction to digital Cartography.

Hydrographic Surveying (2/4 units)

Introduction to off-shore and on-shore position fixing methods, satellite navigation and data analysis. Sounding techniques, Discharge measurements. Tidal observations and analysis.

Adjustment Computation (2/4 units)

Theories of error with applications to Surveying measurements and computations. Use of matrix algebra. Formation and solution of Normal equations. Error ellipses and ellipsoids. Simple statistical tests for quality assurance.

Computer Applications (2 units)

Description and use of digital computers – PC's and mainframes. Creation, transfer and use of data files. Computer Programming in FORTRAN 77 and applications to solution of simple problems in Surveying & Geoinformatics.

- b) **700 level M.Sc.(Professional)**
- c) **800LEVEL COURSES (Masters / PhD)**

Advanced Computer Applications (2 units)

Review of the characteristics of the personal and mainframe computers. Treatment of advanced topics in data storage, manipulation and retrieval; Database Design and implementation. Computer programming in FORTRAN 77 and applications to the solution of problems in Surveying & Geoinformatics. Advances in electronic computing.

Advanced Adjustment Computations (2 units)

Mathematical basis of adjustment calculus. Observation equation, condition equation and mixed mathematical modelling for various systems in Surveying & Geoinformatics. Weighted and functional constraints; generalized and sequential least squares collocation and filtering methods. Univariate and multivariate statistical distributions and applications to the testing of hypothesis and decision making.

Research Methodology in Surveying & Geoinformatics (2 units)

Steps in conducting scientific Research, The definition and extensive study of the measurement process, blunders, systematic errors, precision, and accuracy, Design of experiments (preanalysis of planned measurements), requisites of a good experiment, and their realization; building and Analysis of surveying Evaluation. Interpretation and presentation of terrestrial and celestial surveying measurements, and Photogrammetric and hydrographic data.

Advanced Mathematical Methods (2 units)

Application of Linear Algebra concepts of vector spaces in the Euclidean space to the formulation, the solution and analysis of surveying problems; special characteristics of matrices including generalized inverses; Linear transformation, eigen-values & eigenvectors, inner product spaces, orthogonal and orthonormal systems, similarity transformation and diagonalization, bilinear and quadratic forms. Introduction to linear / non linear mathematical programming and their applications to Surveying & Geoinformatics. Study of Fourier series & analysis, spectral analysis, numerical methods including interpolation, approximation, differentiation, and integration ;applications to the problems in Geoinformatics and Surveying.

7.10 ELECTIVES FOR SPECIALIZATION AREA (TITLES ONLY)

Adv. Cadastral Surveying	2
Advanced Engineering Surveying Methods	2
Issues in Land Administration	2
Advanced Space Geodesy	2
Advanced Geospatial Information Systems	2
Advanced Mathematical Cartography	2
Instrumentation in Land Surveying	2
Crustal Deformation Analysis	2
Optimization and Design of Geodetic Networks	2
Issues in Hydrographic Surveying	2
Advanced Physical Geodesy	2

Advanced Geometric Geodesy	2
Theory & Applications of Geodynamics	2
Inertial Surveying Systems	2
Adv. Analytical Photogrammetry	2
Adv. Digital Photogrammetry	2
Adv. Remote Sensing	2
Adv. Cartographic Techniques	2
Adv. GIS Applications	2
Adv. Mathematical Cartography	2
Adv. GIS Planning & Implementation	2
Adv. Onshore Hydrographic Surveying	2
Adv. Offshore Hydrographic Surveying	2
Ocean Dynamics & Coastal Erosion	2
Issues in Marine Geoid Determination	2

Note:- Individual Universities shall develop the synopsis of the above courses according to their preferred approach to the same subject.

7.11 INSTRUMENTS OF ACCREDITATION

7.11.1 Introduction

Accreditation of an academic programme entails peer assessment of the programme against predetermined standards. The standards often referred to as Minimum Academic Standards (MAS) provide the benchmarks (sec. 6.1 – 6.8) with reference to which the quality of the programme is measured.

The term **quality** simply means *fitness for purpose*. It means that a product or service fits the purpose according to predetermined standards. Quality is envisioned in terms of fulfilling a programme's requirements, needs or desires, and it is usually based on the ability of an institution to fulfill its mission or a programme of study to fulfill its aims.

Quality is being used to designate the level of acceptable standard in almost every industry such that the term **quality assurance** has become a metaphor for the management of the maintenance of quality of goods or services at a good standard. Historically, quality was maintained through control mechanisms. However, in recent years, the practice of quality control has progressively moved from an *ex post* activity to a more proactive process known as quality assurance. The industry developed the concept of Total Quality Management (TQM) to capture three key components of quality namely: quality control, quality assurance, and continuous monitoring and evaluation. TQM is not industry-specific; rather it is a phenomenon or practice that has universal applicability wherever services are rendered or products produced.

In the Nigerian University system, one of the functions of the National Universities Commission, as the regulatory agency of university system is the assurance of the quality of academic programmes (Undergraduate and Post-graduate) offered in the entire University System. As with industry, quality assurance in the university system can be both internal and external. The external mechanism is constituted by accreditation conducted by the NUC. The NUC regulates programmes for which they have the requisite curriculum as well as human and material resources. The structure of the

internal institutional mechanism is comprised of the Academic Departments, the Faculties, Schools or Colleges and the assurance that the quality of academic programmes of the University is acceptable to academic peers across the University System.

The Postgraduate Diploma, the Master's and the PhD degrees in the specialization areas of Surveying & Geoinformatics are some of the Postgraduate Programmes offered in a number of Universities in Nigeria. These programmes aim at producing quality academics, and quality professional land Surveyors, Land Administrators, Geodesists, Photogrammetrists, Hydrographic Surveyors, Cartographers, Environmental Managers and Analysts, and Geoinformatics Managers for both the public and private sectors of the economy. In order to achieve the aims of establishing these programmes, the following accreditation parameters and weights shall be used to assess their characteristics: academic content, assessment, staffing, course delivery & facilities and employers / alumni rating.

7.11.2 Criteria for Assessment (Total Weight: 100 Points)

a) Academic Content (22)

- (i) **Clarity of Mission, Philosophy, Aim and Objectives of the Programme (4)**
The mission, philosophy, aim and objectives of each programme shall be explicitly expressed and clearly defined. The degree to which this is achieved shall be assessed.
- (ii) **Admission Requirements (4)**
Enrolled students must meet the minimum entry requirements. The degree to which this is achieved shall be assessed.
- (iii) **Academic Regulations (4)**
The rules and regulations guiding the conduct of each of the programmes, PGD, Masters and PhD degrees in all the specialization areas of Surveying & Geoinformatics, shall be explicitly stated in a postgraduate prospectus. This and the students' level of awareness of the programme's rules and regulations shall be gauged.
- (iv) **Curriculum (8)**
The curriculum of the PGD, Master's and Ph.D degree Programmes in the specialization areas of Surveying & Geoinformatics should state very clearly the cognitive, affective and psychomotor skills to be acquired by the students. The curriculum should have adequate mechanisms to properly prepare students to assume leadership roles in teaching and research. The adequacy of the curriculum content to produce competent academic and professional leaders should be assessed.

(b) Assessment (12)

- (i) **Course Work (3)**

Assessment shall be made on the efficacy of the course work mode of assessing students' acquired knowledge and skills.

(ii) **Students' Project/Dissertation/Thesis (5)**

The standards of examination scripts, essays, term papers, tests and projects shall be evaluated to ascertain the quality of the programme.

(iii) **External Examination System (4)**

The efficiency of the external examination system shall be ascertained. The quality of the external examiners used shall be assessed. The External Examiners' Reports should be available and used in the assessment.

(c) **Staffing (30)**

(I) **Academic Staff (28)**

The quality, credibility and effectiveness of the academic staff shall be assessed using the following indices:

- (i) Staff-students Ratio of 1:6 (7) Compliance with this ratio shall be gauged.
- (ii) Staff Mix of 30:50:20 (7) Compliance with this ratio shall be gauged.
- (iii) Academic Staff with Doctorates (7) The fraction of Departmental postgraduate academic staff with doctoral degree in relevant fields shall not be less than 67%
- (iv) Staff Development (10) There shall be proven evidence of a well established academic staff development programme. The percentage of staff that has benefited from the scheme shall be determined in the assessment process.

(II) **Non-Teaching Staff (3)**

The number and quality of non-teaching staff available for the programme shall be assessed.

(d) **Course Delivery and Facilities (24)**

(i) **Course Delivery (5)**

The modes of course delivery such as lectures, seminars, term papers, projects, technical reports, home work and assignments have been adequately used in training the postgraduate students of Surveying & Geoinformatics. The accreditation Panel assesses these and measures the effectiveness and adequacy of the various course delivery modes.

(ii) **Teaching and Research Equipment (5)**

Assessment shall be made on the degree of availability of these very essential facilities.

(iii) **Physical Facilities (4)**

Available space including classrooms, studios, laboratories, computer rooms, conference and examination rooms, and furnishings shall be assessed by the panel.

(iv) **Library (4)**

The availability, quantity, currency and relevance of books, international and local scholarly journals, videos, etc. required for the programmes shall be assessed to determine their adequacy.

(v) **Funding (5)**

The adequacy of funds available for the programmes shall be assessed. How far the Postgraduate School is able to support indigent students financially shall also be assessed.

(f) **Employee/Alumni Rating (10)**

(i) **Surveying & Geoinformatics Alumni Activity (4)**

Availability or otherwise of sufficient feedback from Alumni, employers and sponsors shall be obtained and used to assess the level to which the programmes have produced academics and professionals of quality in the areas of their specialization, employability of graduates of the programmes, and the ability to secure employment for their school graduates.

(ii) **Placement Success (3)**

The percentage of graduates of the programmes that gained employment with or without help of career advice in the preceding three years.

(iii) **Career Progress (3)**

The degree to which alumni have moved up the career ladder three years after obtaining employment. Progression is measured through changes in level of seniority and the size of the establishment in which they are employed.

7.11.2 ACCREDITATION RESULTS

For the PGD programme and each area of specialization for Master's and Ph.D programmes, the result of the accreditation shall be given by the aggregate of weights accumulated as follows:

70 – 100%	Full Accreditation	5 years admission
50 – 69%	Interim Accreditation	2 years admission
0 – 49%	Failed Accreditation	No further admission

8. URBAN AND REGIONAL PLANNING

8.0 POSTGRADUATE PROGRAMMES IN URBAN AND REGIONAL PLANNING

8.1 PROGRAMME OBJECTIVES

Nigeria is in dire need of planners to help manage urban and rural spaces. At the moment, professionals are being produced only in a very few Nigerian universities. The shortage of professional planners must be stemmed if chaos is to be mitigated in rural and urban spaces. The M.Sc. Programme in Urban and Regional Planning is designed to contribute towards filling this gap by making use of its existing planning staff to produce high quality, competent planners, to cater for the existing manpower needs of the Country.

8.2 PROGRAMME ORIENTATION

Planning is an inter-disciplinary activity. As a profession, it represents a wide spectrum of specializations ranging from pure design to pure social analysis. It is the view of the designers of this programme that the needs of Nigeria, in the foreseeable future, at least, call for a unique kind of planners who are sufficiently competent in both design and socio-economic analysis to be able to function independently, as well as lead a team of skilled technicians to solve our planning problems. To this end, the master's degree programme is a blend of design and analysis, theory and practice. The programme is designed to last for two calendar years. The first year is the foundation year. All students take the same core courses, and a few electives. The second year affords a greater flexibility to the students. The areas of focus include urban design, housing, regional economic development planning, transportation planning, urban and rural planning. This programme structure maximizes staff strengths, provides clear orientation to students, and a balance between academic competence and professional practice.

8.3 ADMISSION REQUIREMENTS

8.3.1 Postgraduate Diploma

The following shall qualify for the Postgraduate Diploma Admission:

- a) Candidate with third class honour's degree or its equivalent and appropriate postgraduate diploma from Nigerian or other recognized universities.
- b) Candidate with Bachelor's degree in other fields who desires to be in academics.

8.3.2 Professional Masters' Degree Programmes

The following shall qualify for the professional Master's programme:

- a) Graduate of Nigerian or other recognized university who has obtained the approved Bachelor's degree with at least second class honours or its equivalent;
- b) Candidate with third class honour's degree or its equivalent and appropriate postgraduate diploma of Nigerian or other recognized Institutions with a weighted average of not less than 50%.
- c) Holder of the Nigerian Institute of Town Planners' Professional Practice Examination (NITPPPE).

In addition to the above qualifications, candidates shall be required to satisfy all other conditions stipulated by the Department and the Postgraduate School of the University.

8.3.3 Academic Masters' Degree Programmes

Graduates of Nigerian or other recognized universities who have obtained the approved Bachelor's degree with at least second class honours or its equivalent shall qualify for admission into the Academic Master's Programme;

In addition to the above qualification, candidates shall be required to satisfy all other conditions stipulated by the Department and the Postgraduate School of the University.

8.3.4 Master of Philosophy (M.PHIL) Programme in Urban and Regional Planning

ADMISSION REQUIREMENTS:

Candidate must satisfy the following requirements:

- (a) Candidate with a first class or second class upper division in Urban and Regional Planning;
- (b) Candidate with M.Sc degree who failed to score up to 60% cumulative average.

In addition to the above - stated qualification, a candidate shall be required to satisfy all other conditions stipulated by the department and the PG school of the University.

MINIMUM REQUIREMENTS FOR THE AWARD OF M.PHIL DEGREE

The following conditions are the minimum required for an M.PHIL. Degree:

- (i) Course work required is a minimum of 24 units
- (ii) Candidate must pass all the prescribed courses with a cumulative weighted average of not less than 50% (B)
- (iii) Candidate will be required to submit and successfully defend a thesis orally.

8.3.5 Doctor of Philosophy (Ph.D.) Degree Programmes

A candidate with academic Master's degree (M.A., M.Sc.) with a Weighted Average of not less than 60% from a recognized university may be admitted into the Ph.D. programmes.

In addition to the above qualifications, candidates shall be required to satisfy all other conditions stipulated by the Department and the Postgraduate School of the University.

8.4 DURATION OF PROGRAMMES

8.4.1 Postgraduate Diploma

- a) Full-time: minimum of two (2) semesters
- b) Part-time: minimum of four (4) semesters

8.4.2 Professional Master's Degree

- a) Full-time: minimum of three (3) semesters
- b) Part-time: minimum of six (6) semesters

8.4.3 Academic Master's Degree

- a) Full-time: minimum of three (3) semesters
- b) Part-time: minimum of six (6) semesters

8.4.4 Doctor of Philosophy Degree

- a) Full-time: minimum of six (6) semesters
- b) Part-time: minimum of eight (8) semesters

8.5 REQUIREMENTS FOR GRADUATION

8.5.1 Postgraduate Diploma

- i) In order to be eligible for the award of PGD, a candidate must pass all the prescribed courses and have a weighted average not less than 50%.
- ii) A candidate must also satisfy all other conditions stipulated in the regulations of the Post graduate School.

8.5.2 Professional Master's Degree

- i) In order to be eligible for the award of Professional Master's Degree, a candidate must pass all the prescribed courses and have a weighted average not less than 50%.
- ii) A candidate must also satisfy all other conditions stipulated in the regulations of the Post graduate School.

8.5.3 Academic Master's Degree

- i) In order to be eligible for the award of a Master's Degree, a candidate must pass all the prescribed courses and have a weighted average not less than 60%.
- ii) A candidate must take and pass a minimum of 50 credit units.
- iii) A candidate must also satisfy all other conditions stipulated in the regulations of the Post graduate school.

8.5.4 Doctor of Philosophy (Ph.D) Degree

- i) In order to be eligible for the award of Ph.D. Degree a candidate must pass the prescribed coursework amounting to a minimum of six (6) units. In addition, candidates must pass the qualifying examination and a final oral examination with respect to the thesis in accordance with the approved University regulations.
- ii) A candidate must also satisfy all other conditions stipulated in the regulations of the Post graduate School/College.

8.6 EXAMINATIONS, GRADING PROCEDURE AND RESULTS

8.6.1 Examinations:

- a) In addition to continuous assessment, final examinations shall be given for every course at the end of each semester.

The total score obtainable for any course (continuous assessment and final examination) is 100%. The total final examination scores would vary as follows from one course to another depending on the score of the continuous assessment of a course as explained in section 3.4 (ii)

Continuous Assessment	30	40
Final Examination	70	60
Total	100%	100%

- b) Each course shall normally be completed and examined at the end of the semester in which it is offered.
- c) A written examination shall normally last a minimum of one hour for one unit course, and a course of 3 credit units shall have 3 hours of examination.

8.6.2 Pass Mark

The minimum pass mark in any course shall be 50%

8.6.3 Grading System

Grading of courses shall be done by a combination of percentage marks and letter grades translated into a graduated system of Grade Point Equivalents (GPE). For the purpose of determining a student's standing at the end of every semester, the Grade Point Average (GPA) system shall be used. The GPA is computed by dividing the total number of credit points (TCP) by the total number of units (TNU) for 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 Grade Point Equivalent of the mark scored in the course. Each course shall be graded out of a maximum of 100 marks and assigned appropriate Grade Point Equivalent as in the following table:

(i) credit units	(ii) % scores	(iii) letter Grades	(iv) Grade Points (GP)	(v) average (GPA)	(vi) (CGPA)	(vii) Class of Degree
Vary according to contact hours assigned to each course per week per semester, and according to load carried by students	70 – 100	A	5	Derived by multiplying (i) and (iv) and dividing by Total Credit Units	4.50– 5.00	Distinction
	50 – 69	B	4		2.40-4.49	Pass
	below 50	F	0		below 2.40	fail

8.6.4 Presentation of Results

Results from the Postgraduate School's Board of Examiners shall be presented to Senate for approval.

8.6.5 Release of Results

Results shall be released/published not later than 2 weeks after approval by the Senate

8.7 DEGREE CLASSIFICATION

The determination of the degree shall be based on the Cumulative Grade Point Average (CGPA) earned at the end of the programme. The GPA is computed by dividing the total number of credit points (TCP) by the total number of units (TNU) for all the courses taken in the semester. The CGPA shall be used in the determination of the class of degree according to the following breakdown:

CUMULATIVE GRADE POINT AVERAGE (CGPA)	CLASS OF DEGREE
4.50 - 5.00	Distinction
2.40 - 4.49	Pass
Below 2.40 -	Fail

8.8 RESOURCE REQUIREMENTS FOR TEACHING AND LEARNING IN THE PROGRAMME

8.8.1 ACADEMIC STAFF

(i) TEACHER TO STUDENTS' RATIO

The staff to students' ratio for the Undergraduate Programme in Environmental Studies is 1:15. The general norm for resource requirements for the postgraduate to undergraduate programmes is 1:10. Hence for effective teaching and learning the M.Sc/M.Tech. programme shall have a teacher to student ratio of 1 to 12.

(ii) ACADEMIC STAFF WORK-LOAD

With a minimum load of 18 credits for students and a minimum of six full-time equivalents of staff in each programme, staff should have a maximum of 15 contact hours per week for lectures, tutorials, term papers and supervision of projects.

(a) STAFFING

The NUC guidelines on staff/students ratio for the postgraduate programmes shall apply. However, there should be a minimum of six full-time equivalents of staff on ground in a department. At least, 50% of teaching staff should have doctoral degrees as well as sufficient professional experience.

(b) STAFF MIX

The staff mix recommended for effective curriculum delivery in the Master's programme is 20:30:50 for Professor/Reader, Senior Lecturer and others respectively.

8.8.2 NON-ACADEMIC STAFF

The services of supporting staff, which are indispensable in the proper running of the programmes as well as for administration, are required. It is important to recruit very competent senior technical staff to maintain teaching and research equipment. Universities should pay attention to optimum proportioning of the non-academic staff to avoid redundancy and overstaffing

- The ratio of non-academic staff to academic staff should be 1:4.
- Among the non-academic staff, the ratio of senior staff to junior staff should be 3:2.

8.8.3 COMPUTER LITERACY

With the computer age and application of information technology, both academic and non-academic staff should be computer literate.

8.8.4 ACADEMIC PHYSICAL SPACE AND EQUIPMENT REQUIREMENTS

i) Professional Physical Facility Requirements

- a) Computer Room, including Virtual Library facilities.
- b) Board Room to enhance professional development.

ii) Office Accommodation

The standard space requirements as shown below shall apply.

Position/Rank

Professor's Office
Head of Department's Office
Tutorial Teaching Staffs' Office
Other Teaching Staff Space
Technical Staff Space
Secretarial Space
Seminar Space/per Student

iii) Classroom Space and Examination Theatres

- Adequate classrooms should be provided with enough chairs and tables.
- Examination halls and theatres should be provided to minimize the rates of examination malpractice.

iv) Equipment

For effective learning, the following equipment should be provided:

- Computers
- Photocopying Machines/video Cameras
- Tape Recorders
- Internet and e-mail facilities

9.8.5 LIBRARY FACILITIES:

There must be adequate library facilities to cater for the interests of all the courses in the programmes. These include current journals, handbooks, textbooks, manuals, codes of practice, standards and specifications, etc.

8.9 LEARNING OUTCOMES FOR ENVIRONMENTAL STUDY PROGRAMMES

Comprehensive Knowledge of Areas of Specialization

Graduates should have a comprehensive knowledge of their areas of specialization, embodying an understanding of the theoretical foundations and quantitative tools of the areas of specialization, as well as the ability to apply this knowledge to actual real world problems.

Problem solving capabilities

Graduates should be able to demonstrate problem solving capacity through literal, critical, innovative and creative connections among diverse fields of study in analyzing problems.

Global Perspective

Graduates should have a global perspective, based on an understanding of both the domestic and global environments of the country.

Communication competence

Graduates should be able to communicate effectively graphically, in both writing and oral presentation in ways appropriate for a variety of objectives and audiences.

Ability to manage information

Graduates should have an understanding of advances in information technology and be able to effectively integrate the innovations in their decision-making processes.

Social responsibility

Graduates should understand and demonstrate the ethical considerations and environmental ramifications of their decisions.

Behavioural skills

Graduates should understand human behaviour in the built environment. They should:-

- Have the ability to utilize leadership skills effectively;
- Interact effectively in group situations;
- Manage culturally diverse environments;
- Help others develop their skills; and
- Resolve conflicts effectively and act independently in low feedback environments.

8.10 DOMAIN OF PROGRAMME

The postgraduate Urban and Regional Planning programmes shall be domiciled in the Department of Urban and Regional Planning.

8.11 STUDENTS' ENROLMENT

- i) Enrolment for professional degree programmes shall be subject to the carrying capacity of the Department.
- ii) Enrolment for Academic degree programmes shall be subject to the carrying capacity of the Department but not more than 20% of the undergraduate enrolment of the Department.

8.12 ACADEMIC REGULATIONS

8.12.1 ACADEMIC SESSION

An academic session consists of two semesters. Each semester normally comprises 15 weeks of teaching and two weeks of examinations.

8.12.2 MODULAR SYSTEM

All Urban and Regional Planning postgraduate programmes shall be run on a modular system, commonly referred to as course system. All courses should therefore be subdivided into more or less self-sufficient and logically consistent packages that are taught within a semester and examined at the end of that particular semester. Credit weights should be attached to each course.

8.12.3 DEFINITION OF CREDIT OR UNIT:

Credits are weights attached to a course. One credit is equivalent to one contact hour per week for a semester of 15 weeks of lectures or tutorials, or three hours per week of term paper, studio or practicals per semester of 15 weeks.

8.13 PROGRAMME REQUIREMENTS

8.13.1 Registration Procedure

Registration of courses closes not later than the end of the third full week of the semester. A student can withdraw from the course without penalty any time up to and including the fifth week into the semester. Any student who withdraws after the seventh week will be deemed to have failed except in special cases approved by the Post graduate School on the recommendation of the Head of Department.

8.13.2 Student's Academic Status

A student's academic status shall be determined on the basis of his/her performance at the end of the semester examinations. The following categorization shall be used:

- i) **Good Standing**
To be in good standing, a student must, in each semester, have a Cumulative Grade Point Average (CGPA) of not less than 2.40.
- ii) **Probation**
 - (a) A student whose Weighted average is less than 50% or whose CGPA is below 2.40 at the end of a particular semester shall be placed on probation for one academic session. Such a student shall be allowed to register for courses at the next higher level in addition to his/her probation level courses provided that the total number of courses that he/she has shall not exceed 15 credit units per semester in addition to the following:

- (b) The regulation in respect of the student's work load is complied with: and
- (c) The pre-requisite courses for the higher level courses have been passed.

iii) **Withdrawal**

A student whose CGPA falls below 2.40 at the end of a particular year of probation shall be required to withdraw from the university.

A student who has been on probation once and whose CGPA is still less than 2.40 in the session immediately following the one in which he was already on probation shall be required to withdraw from the programme.

iv) **Transfer**

Students who transfer from other Universities shall be credited with only those courses deemed relevant to the programmes which they have already passed prior to their transfer provided that they shall meet the additional requirements in the receiving Department.

8.14 ATTENDANCE

In order to be eligible to take examination in a particular taught course, a student shall be expected to have accumulated a minimum of 75% attendance out of the total period of formal instruction delivered for the course.

8.15 COURSE EVALUATION

i) **Attainment levels**

In the Postgraduate Urban and Regional Planning Programmes, assessment of student's achievements shall be based on:

- (a) Examinations
- (b) Term Papers
- (c) Design Critiques and Presentations
- (d) Studio/Practicals
- (e) Group project Assignments
- (f) Thesis

ii) **Continuous Assessment**

Continuous assessment shall be done through essays, tests, term papers, tutorial exercises, quizzes and home-works.

- a) Scores from continuous assessment shall not constitute less than 30% of the final marks for courses which are primarily theoretical.
- b) For courses which are partly term paper presentations and partly theoretical, scores from continuous assessment shall not constitute less than 40% of the final marks.
- c) For courses that are entirely term paper presentation such as seminar/studio work, continuous assessment shall be based on a student's term paper or reports or design work and shall constitute 100% of the final marks.

8.16 STUDIO AND PROJECT REPORTS

a) Studio

There should be a minimum of three (3) contact periods of four (4) hours studio sessions each per week, a “studio” constituting lecture and critique interaction. Thus a course of one credit unit should comprise 12 hours of lecture and three hours of tutorials.

b) Project Reports

There would be Project Report presentations which shall form part of the graduation requirements.

8.17 ENTREPRENEURIAL STUDIES

Entrepreneurial Studies shall be an integral part of Post-Graduate Urban and Regional Planning Programme with the aim of empowering the graduates with skills that will enable them engage in income-yielding ventures thus preparing them to be responsible, enterprising individuals who will become entrepreneurs or entrepreneurial thinkers and contribute to national economic development and sustainable communities.

8.18 EXTERNAL EXAMINATION SYSTEM

The external examination system shall be used in the final year of the post graduate programme to assess final year courses and projects, and to satisfy the overall performance requirements of the graduating students, as well as the quality of facilities and teaching.

LIST OF COURSES FOR THE M.Sc. (URP) 800 Level Courses (First year)

Compulsory Courses	Credits
Quantitative Techniques in Planning	2
Planning Law and Administration	2
Planning Studio I	4
Professional Planning Colloquium	2
Planning Analysis	2
Population and Urbanization Studies	2
Planning Theory	2
Urban and Regional Economics	2
Introduction to Transportation Planning	2
Urban Planning I	2
Regional Planning I	2
Principles of Urban Planning	2
Environmental Engineering	2
Site Selection and Analysis	2
Landscape Planning	2
Research Techniques in Planning	2
Total	34

Elective Courses (Max. of 8 Credits)

Computer Applications in Planning 1	2
Housing Economics and Management	2
Planning and Political Economy 1	2
Urban Politics	2
Urban Sociology	2
Planning and the Environment	2
Urban Design Principles and Techniques	2
Rural Planning and Development Techniques	2
History of the Development of Settlements	2

800 Level Courses (2nd Year)

Compulsory Courses and Credit Pre-Requisite

Planning Internship	2	-
Project Planning and Implementation	2	-
Planning Practice and Ethics	2	-
Planning Studio II	4	-
Professional planning colloquium		
Thesis	6	
Transportation Systems Analysis and Planning	3	
Industrial Planning and Development	<u>2</u>	
Total	<u>21</u>	

Quantitative Techniques in Planning (2 Credits)

The need for and purpose of research in planning; the scientific method; induction and deduction; hypotheses, theory, law, paradigms; Basic Presuppositions, problem formation; research design; data requirements and sources; data collection, primary and secondary sources, sampling and sampling methods; data analytic techniques, analysis of variance, regression, correlation, testing research hypotheses, etc. reporting and documentation.

Planning Law and Administration (2 Credits)

Planning legislation in Nigeria; powers and functions of planning authorities (Federal, State and Local government levels): land tenure systems in Nigeria and implications for planning, Public health ordinances, building regulations, highway code and implications for planning: The Land Use Act, and implications for planning, laws on compensation and compulsory acquisition in Nigeria, Development control and zoning; planning administration, institutional structure, responsibilities, power, procedures; tribunals and commissions of enquiry; voluntary organizations, self-help, and special interest groups; urban and local government reforms in Nigeria and effects on planning.

Planning studio II – Urban/Regional Structure Plans (4 Credits)

Methods and techniques of preparing regional and urban structure plans, design of new towns and capital cities – master plans and structure plans.

Professional Planning Colloquium 1 (2 Credits)

A seminar series based on topical planning issues, past and present on the local, national and international levels. Theory and practice to be drawn from a wide range of interests; professional, legal, environmental, political etc. concerning the environment and planning.

Planning Analysis (2 Credits)

Public policy and planning; policy choices, models of characters, simulation models; decision theory and analysis; rational techniques for policy analysis: cost-benefit analysis: Environmental impact Assessment PERT, Critical Path Analysis, PPBS, forecasting, Social Indicators problem areas in policy analysis: efficiency vs. effectiveness, equity vs. growth, quantitative social change vs. qualitative change etc.

Population and Urbanization Studies (2 Credits)

Characteristics and distribution of population; population projection and demographic Analysis; population and migration accounts; population dynamics, history of urbanization in Africa.

Planning Theory (2 Credit)

The nature of planning, procedural and substantive theories in planning: statutory and advocacy planning: the planning process, models, and traditions in both capitalist and socialist economies; public participation in planning; social science contribution to the development of planning theory: plan generation; planning and the state; planning and the economy; the politics of planning.

Regional and Urban Economics (2 Credits)

Regional economic growth and development; origins and objectives: regional growth models-export base, cumulative causation/polarization: regional imbalance and factor mobility: equilibrating or disequilibrating: industrial location theories and models; regional multipliers; regional policy options, approaches/strategies; regional institutions and administration, regional development policy in Nigeria. Urban economics: economies of geographical concentration-determinants of size and structure of urban settlements. Economics of scale, agglomeration economies, intra-urban location and landuse; the urban labour market; the urban economy: theory of city size and spacing; urban environmental quality; urban housing.

Introduction to Transportation Planning (2 Credits)

Landuse and transportation planning: trip (traffic) generation, distribution, modal split and assignment; methods of traffic forecasting; origin and destination surveys; design of road alignments, speed, site, distance, Lanes and carriage ways: safety regulations, transportation network design and standards.

Urban Planning I (2 Credits)

Introduction to urban planning: contemporary concepts, plan preparation, programming methods and techniques, plan implementation, urban function, spatial organization and environmental form.

Regional Planning I (2 Credits)

Introduction to regional planning: broad coverage of the field of regional planning, basic concepts, history, the influence of the political, economic and social environment, techniques of analysis, the tasks and problems in preparing regional plans; regional spatial planning.

Computer Application in Planning I (2 Credits)

Introduction to computers in a planning environment with particular emphasis on the capabilities and limitations of micro-computers in planning. The use of selected applications, software for data analysis, report writing, record keeping, information storage and retrieval etc. will be emphasized.

Housing Economics and Management (2 Credits)

Housing markets; housing forms; housing finance; housing programmes and management techniques, the housing sector and National planning; housing and developing countries; determinants, implementation, management, socio-cultural and technological parameters of housing; case studies of housing programmes in Nigeria – objectives, design, implementation, finance, management, prospects and problems; self-help housing projects in developing countries.

Planning and Political Economy I (2 Credits)

The nature of political economy; the study of the system of production, distribution, and consumption of wealth, relations of production and implications for planning. Topics to be covered include: the neo-classical and Marxian methods; Labour theory of value; labour process and surplus-value; absolute and relative surplus value; general law of capital accumulation; the transition from feudalism to capitalism (Russia, China and Cuba).

Urban Politics (2 Credits)

A consideration of the political dimension of planning decisions. Emphasis will be placed on the governmental structure, interest groups and power relations as they relate to development decision-making processes. Analysis of planning and political institutions at the national and sub-national levels in policy areas such as environmental control, land use, industrial development, transportation planning etc. Politics, design and implementation.

Urban Sociology (2 Credits)

Theories of urbanism, and impact of city life on social relations and social institutions. The problems of urbanization and the implications for public policy. A treatment of the most important issues relating to the promotion of growth and the conservation of natural resources and environment, and the need to balance efficiency with justice in the allocation of resources in the public sector. Topics to be covered include: representation, welfare, financial allocation, transportation, housing, recreation, environmental quality etc.

Planning and the Environment I (2 Credits)

Treatment of the environmental implications of major planning decisions. Topics to be covered include – population and ecosystems, energy resources, supplies, depletion

limits, air pollution, water pollution, disruption of ecological systems, policy options towards the environment: standards, pricing, user-right, etc. urban waste management.

Urban Design Principles and Techniques (2 Credits)

Values, forces and institutions shaping urban form, concepts and approaches to urban form and design; comprehending the built environment, architectural and environmental programming, Pattern, language and urban form: macro theories of design; space standards; ecological approaches to design, resources, composition, space articulation and aesthetics, site planning and design.

Project Planning, Evaluation and Implementation (2 Credits)

A survey of issues commonly encountered in the transmission of research, resources and policy into development programme; problems of investment planning (consistency, optimization, investment decision rates, horizons etc.), phasing of implementation; techniques for project evaluation. Topics to be covered include: need analysis, organizational structure; staffing; budget preparation, programme evaluation (project appraisal, financial returns, CBA). Administration and change in the context of design and implementation.

Planning Practice and Ethics (2 Credits)

Laws related to plan preparation and implementation and arbitration. Preparation of planning brief, tender documents; professional fees; professional code of conduct; office organization and management techniques (public and private), project initiation, preparation and submission of preliminary outline for proposed project; selection of project team, code of professional conduct and business ethics.

Planning Studio II (Local Plans) (4 Credits)

Village Planning and Design. Factors to be considered for selecting sites for specific functions and objectives; Site analysis, topography, (Soils, Vegetation; terrain landscape etc). Data collection and analysis for planning: Design consideration (circulation, aesthetics, systems, functionality, efficiency, economy, social and economic impacts). Design and Planning elements of urban and regional systems.

Professional Planning colloquium II

A seminar series based on topical planning issues, past and present, local, national and international; theory and practice to be drawn from a wide range of interests; professional, legal, environment and planning.

Thesis (6 Credits)

A piece of original work on an approved theme or topic, a thesis based on original work on a topic approved by the Board of examiners. The thesis provides an opportunity to each student to synthesize the knowledge and skills acquired during the course. Each student is expected to work closely with the supervisors appointed by the Board of Examiners.

A report/project comprising a design brief accompanied by appropriate report on an approved project may also be accepted. In this case also, approval of the Board of Examiners is necessary.

Transportation Systems Analysis and Planning (2 Credits)

Economic analysis of freight and passenger transportation systems, pricing and regulation, public investment and subsidization of operations, research on land systems analysis, techniques of transportation systems, network flows, design of networks, routes, and schedules.

Urban Planning II (2 Credits)

Analysis and evaluation of current concepts and principles in the planning of urban residential, commercial, industrial areas, of community facilities, and of other service and employment centres. Theories of urban renewal and change in the physical structure of cities, urban functions, spatial organization and environmental form.

Regional Planning II (2 Credits)

Economic analysis of regions using selected techniques and models in setting regional development goals; critical analysis of some regional studies as to their methodologies, regional function, spatial organization and environmental form.

Computer Applications in Planning II (2 Credits)

An advanced treatment of the application of micro-computers in planning with special emphasis on data analysis and data management software such as SPSS, DBASE, Lotus 1-2-3 and Information systems.

Policy Analysis (2 Credits)

Public policy and planning: policy choice, models, simulation models: decision theory and analysis; rational techniques for policy analysis: cost - benefit analysis, Environmental Impact Assessment, PERT, critical path analysis PPBS. Forecasting, social indicators; problem areas in policy analysis, efficiency vs. effectiveness, equity vs. growth, quantitative social change vs. qualitative change.

Housing Form and Environment (2 Credits)

Planning and Design criteria for housing forms and standards, Economic, socio-cultural and technological parameters of housing, housing densities, location and layout, services and community facilities, housing policy options, private cooperatives, public and self-help housing: Housing programmes in Nigeria, origins, design, implementation, finance, management problems, prospects.

Economic Development Planning (2 Credits)

An analysis of the leading models and issues in economic development process. A review and synthesis of development theories, models, data systems and strategies. Quantitative and qualitative economic policy planning in a mixed economy, development process and planning under multiple objectives, social accounting and development planning, development planning and policy making.

Planning and Political Economy II (2 Credits)

The historical process of regional and metropolitan development, with special emphasis on Third World problems. The basic approach is production analysis. It also considers main stream methods including location, comparative advantage, and feedback system theories. Development is interpreted as the penetration of the capitalist mode of production into pre-capitalist societies. Topics covered include: history and regional development: regional and urban centres. Three views of development (capital) accumulation, macro-social change, dialectics in urban and regional transformation. City vs. rural hinterland under different modes of production, equilibrium and divergence; contradiction and change. Modes of production: forces and relations of production; class relations, structure and dynamics of Asian, antique, feudal, capitalist, and socialist modes.

Primitive vs. civilized societies. Transition to capitalism, imperialism; history and development of metropolitan regions. Land size, rule and dominance, location and central place theories in relation to regional development: inter-regional feedback systems; inter-regional trade, multi-nationals and the logic of dependency; capitalism and socialism in the Third World today, planning options.

Urban Design Studio

Urban form analysis and design, new town design, urban redevelopment, preservation and conservation; urban facilities analysis and design; block planning and city imaging.

Environmental Engineering

Networks and infrastructure in urban and regional planning, Water distribution, sewage, gas, electrical power, public lighting. Evaluation of need and development of demand. Data evaluation in relation to population density. Social costs of network layout.

Management of solid waste, collection and disposal.

Water: procurement, treatment, distribution.

Sewage: Waste water conveyance, treatment and disposal.

Power stations, electric networks and distribution substations.

Public lighting and open space illumination design.

Road networks and infrastructural networks. Luck network building techniques, integrated systems: Thresholds and the definition of development, minimal units coverage indices.

Site Selection and Planning:

Site selection: Factors in selecting a site to serve given objectives and functional needs. Site analysis investigation and analysis of a site, its topography, soil condition, ground water table, vegetation, micro-climate and district features: the site plan, its scale and contents. Circulation and utility networks. Site engineering, building lines, setback lines, frontage plot coverage, design standards.

The village as an organic entity. Rural –urban relationships, complementary functions, the rural-urban continuum, . physical, social and economic structures of a village. Problems of immigration, loss of cultivable land, flooding and water-logging, lack of utilities and services, poverty and distress. Need for afforestation, soil conservation and wild-life preservation; transhumance, accessibility of village, inter-village communication.

Village communities in Nigeria, their types and structures. Rural planning in relation to national and regional policies. Basic principles of community development. Community development in relation to rural planning and housing; self-help projects; role of voluntary organizations in community development.

Landscape planning 1

Definition of Landscape planning and landscape design and their relationship to town planning; a review of historical garden form and the historical evolution of public parks and recreational areas. Materials and construction techniques including grading, structural elements and plants. Existing site inventory and analysis, landscape design programme, schematic landscape design, illustrative detailed design and implementation of drawings and documents

The use of landscape. Design analysis of completed projects. The application of landscape planning and design solutions to a wide range of town planning situations in order to secure a planned and attractive urban environment.

Rural planning and development techniques

Ecological concept and the conservation and management of natural resources. The claims made on resources by competing and complementary forms of life, and the special role of man within this eco-system. Planning conceived as “applied ecology”.

Physical factors affecting land-use pattern in rural areas. Valuation and appraisal of rural land as an aid to planning and development decisions.

Approaches to rural planning and conservation techniques. Village planning and village policy in the countryside. Industry in the country side, large scale agriculture, manufacturing industry, extracting process etc, reclamation of derelict areas in the country side.

History of the Development of Settlements

- The “a priori” situation of human settlements; similarities and differences.
- The development of human settlements in Eastern and Western Europe.
- The development of human settlements in the Third World.
- The development of human settlements in Africa.

Registration, Examination Regulations, etc.

The relevant provisions of the Regulations Governing Higher degree and Diploma shall apply.

2. M. PHIL/PH.D PROGRAMMES.

The department offers M. Phil/Ph.D. programmes in the same areas of specialization as the M.Sc. programmes. However, admission into a particular area depends on the availability of a suitable supervisor for an M.Phil/Ph.D thesis in that area. Candidates who are interested in pursuing an M.Phil/Ph.D. programme are therefore advised to make prior enquiries from the Head of Department before sending in an application.

To be eligible for admission, a candidate must possess a good M.Sc. Degree in the area he/she wants to pursue M.Phil/Ph.D. programme. The quality of the M.Sc. degree must be such as to meet the provisions of the Regulations Governing higher Degrees and Diplomas of the university concerned.

8.19 INSTRUMENTS OF ACCREDITATION

8.19.1 INTRODUCTION

The term **quality** simply means fitness for purpose. It means that a product or service fits the purpose according to predetermined standards. Quality as fitness for purpose envisions quality in terms of fulfilling a programme's requirements, needs or objectives and is usually based on the ability of an institution to fulfill its mission or a programme of study to fulfill its aim.

Quality is being used to designate the level of acceptable standards in almost every industry such that quality assurance has become a metaphor for the management of the maintenance of quality of goods or services at a good standard. Historically, quality was maintained through control mechanisms. However, in recent years, the practice of quality control has progressively moved from an ex post activity to a more proactive process, known as quality assurance. The industry developed the concept of *total Quality management (TQM)* to capture three key components of quality, namely: *quality control, quality assurance* and *continuous monitoring and evaluation*. TQM is not industry-specific; rather it is a phenomenon or practice that has universal applicability wherever services are rendered or products produced.

In the Nigerian University System, National Universities Commission is the regulatory agency of the programmes (undergraduate and Post-Graduate) offered in the entire University system. As with industry, quality assurance in the university system can be both internal and external. The external mechanism is constituted by accreditation conducted by the NUC which regulates programmes by ensuring that the universities establish only programmes for which they have the requisite curriculum as well as human and material resources. The structure of the internal institutional mechanism is comprised of the senate. The external examination system provides additional assurance that the quality of academic programmes of the university is acceptable to academic peers across the university system.

Accreditation of academic programmes entails peer assessment of the programme against pre-determined standards. The standards are often referred to as Minimum Academic Standards and provide the benchmarks against which the quality of the programme is measured.

The Urban and Regional Planning Programme is one of the postgraduate programmes offered in some Universities in Nigeria. This programme aims at producing quality professional managers and academics for both the public and private sectors of the economy. In order to achieve the aims of establishing this programme and to assess the characteristics of the programme, the accreditation criteria and weight stated below should be used in the assessment of the Postgraduate Urban and Regional Planning programme

8.19.2 CRITERIA FOR ASSESSMENT (Total:100 points)

a) **ACADEMIC CONTENT (22)**

- i) **Clarity of Mission, Philosophy, Aims and Objectives of Programme (4):** The mission, Philosophy, aims and objectives of the programme must be explicitly expressed and clearly defined.
- ii) **Admission Requirements (3)**
The degree to which students admitted into the programme meet prescribed Minimum Admission Requirements should be assessed.
- iii) **Academic regulations (3)**
The rules and regulations guiding the conduct of the M.Sc Programme should be explicitly stated in a postgraduate prospectus. The students' level of awareness of the programme's rules and regulations should be gauged as well.
- iv) **The Curriculum (12)**
The curriculum of the Postgraduate Urban and Regional Planning Programme should state very clearly the cognitive and affective skills to be acquired by the students. The curriculum should have adequate mechanisms to properly prepare students to adapt to the practical world of Urban and Regional Planning. The adequacy of the curriculum content to produce competent planners should be assessed.

b) **ASSESSMENT (Course Work, Thesis, External Examination System) (10)**

- i) **Course Work (3)**
Assessment should be made on the efficacy of the course work mode of assessment.
- ii) **Student's Thesis (3)**
The standard of essays, examinations, tests and projects should be evaluated to ascertain the quality of the programme.
- iii) **External Examination System (4)**
The efficiency of the external examination system should be ascertained. The quality of the external examiners used should be assessed through the external examiners' reports.

c) **STAFFING (30):**

a) **Academic Staff (28)**

The quality, relative quantity and mix of the academic staff should be examined, using the following criteria:

- i) **Staff: Students Ratio (1:12) (10)**
- ii) **Staff Mix of 20:30:50 (5)**
- iii) **Academic staff with Doctorates (7)**

Percentage of faculty with a doctoral degree. A minimum of 50% of the teaching staff should have doctorate degree or equivalent in relevant disciplines.

- vi) **Staff Development (5)**
There should be proven evidence of a well established staff development programme. The accreditation panel should determine the percentage of staff that has benefited from the scheme.
- b) **Non-Teaching Staff (2)**
The quality of the non-teaching staff available for the programme should be assessed.
- c) **COURSE DELIVERY AND FACILITIES (24)**
 - i) **Course delivery (11)**
The modes of course delivery such as lectures, seminars, group projects, work in-progress, training, etc, have been adequately used in training the Postgraduate Urban and Regional Planning students. The Panel should assess this and measure the effectiveness and adequacy of the various course delivery modes.
 - ii) **Facilities (5)**
Assessment should be made on the degree of availability of facilities such as classrooms, seminar rooms, lecturers' office accommodation, ICT tools and equipment.
 - iii) **Library (5)**
The quality, relevance, currency and quantity of books and international academic and scholarly journals available for the programme should be assessed to determine their adequacy or otherwise.
 - iv) **Funding (3)**
The adequacy of funds available for the programme should be assessed. How far is the postgraduate school able to assist indigent students financially?
- d) **EMPLOYERS/ALUMNI RATING (14)**
 - i) **M.Sc Alumni Activity (3)**
Availability of feedback from Alumni, employers and sponsors should be obtained and used to assess the level to which the programme has produced the required quality of managers. Employability of graduates; ability to secure employment for their graduates.
 - ii) **Placement Success (2)**
The percentage of preceding year graduates that gained employment with or without the help of career advice.
 - iii) **Employer Recommendation (2)**
Employers of M.Sc. graduates would be asked to rate their performance levels.
 - iv) **Career Progress (2)**

The degree to which alumni have moved up the career ladder three years after graduating. Progression is measured through changes in the level of seniority and the size of the company or organization in which they are employed.

v) **International Students (4)**

The percentage of international students in the programme.

vi) **Foreign Language (2)**

Number of staff with foreign language experience and/or number of foreign languages required to compete.