CHAPTER ONE : INTRODUCTION

1.1   Background Introduction

Engineering is the creative application of science, mathematical methods and empirical evidence to the innovation, design, construction and maintenance of structures, machines, materials, devices, systems, processes, and organizations. It encompasses a broad range of more specialized fields, each with a more specific emphasis on particular areas of applied mathematics, applied science and type of application.

The aim of running Engineering programmes is to produce graduates who can play key roles in industries, mostly in the manufacturing field with their work areas varying from petroleum and petrochemicals to food production, building, computer, construction, electrical, electronics, materials, specialty chemicals, plastics, power production, environmental control, waste management, biotechnology, nanotechnology etc.

This curriculum is based on NUC Minimum Benchmark and COREN adopted Washington Accord standard for evaluation of all Engineering programmes in the University. The measurable outcomes to be evaluated for these programmes are based on the adopted objectives of Washington Accord which are popularly called Outcome Based Engineering Education (OBE)

1.2   Brief History of the Faculty of Engineering

The Faculty of Engineering at Federal University Wukari was established on 1st October 2013, a year after the university was founded by the Federal Government of Nigeria. Initially, it consisted of five Departments: Agricultural Engineering, Chemical Engineering, Mechanical Engineering, Electrical/Electronics and Computer Engineering, and Civil Engineering with Engr Prof Emenike Wami as pioneer Dean. However, commencement of the Programmes did not take place due to lack of enough resources and facilities. On 16th June 2016, during a regular sitting of the University Senate, it was decided that the Engineering Programmes be suspended, and the staff were deployed to other Departments/Units. Four years later, in January 2021, the Senate re-established the faculty with three Departments: Agricultural Engineering, Chemical Engineering,

and Computer Engineering with Engr Prof Isaac Olufemi Agbede as the Dean. This decision was reached following recommendations by Nigerian University Commission (NUC) Resource Verification Team. Consequently, student enrollment began in the 2020/2021 academic session.

1.3   Philosophy and Objectives of Engineering Disciplines

1.3.1   Philosophy

To achieve the goals and objectives of the National Policy on Industrialization and Self-Reliance, the Engineering education is geared towards:

(i)   The development of a thorough practice in engineering training.

(ii)   Broad–based training in general Engineering at the early stages of the programme.

(iii) Practical application of Engineering, Technology and Manufacturing Processes.

(iv) Adequate training in human and organizational behaviour and management.

(v)   Introduction to entrepreneurial education and training.

(vi) Close association of the programme with industries in the country.

The general philosophy therefore is to produce graduates with high academic standard and adequate practical background for self-employment as well as being of immediate value to industry and the community in general.

1.3.2   Goals and Objectives

The general goals and objectives of engineering training are in consonance with the realization of national needs and aspirations vis-à-vis industrial development and technological emancipation. The graduates must therefore be resourceful, creative, knowledgeable, and able to perform the following functions:

(i)   To design engineering projects and supervise their implementation.

(ii)   To design and implement components, machines, equipment, and systems.

(iii) To design and develop new products and production techniques in industries.

(iv)   To install and maintain complex engineering systems so that they can perform optimally in our environment.

(v)   To adapt and adopt exogenous technology to solve local engineering problems.

(vi) To be able to exercise original thought, have good professional judgment and be able to take responsibility for the direction of important tasks.

(vii) To be able to manage people, fund, materials, and equipment.

(viii) To improve on indigenous technology to enhance local problems solving capability

1.4   Basic Admission Requirements and Expected Duration of the Programme

The basic admission requirements for engineering disciplines shall be:

1.4.1   Admission Requirements for Unified Tertiary Matriculation Examination (UTME)

The minimum admission requirements for Engineering are five (5) passes at credit level in the Senior Secondary School Examination or GCE 'O' Level in five subjects including Mathematics, English Language, Physics and Chemistry in WAEC, NECO and NABTEB Examinations. It is also desirable for candidates to have Further Mathematics and Technical Drawing at credit levels. Such candidates shall have added advantage. Candidates who want to study Agricultural Engineering are expected to have credit in Biology or Agricultural Science.

A candidate for any engineering discipline is also expected to have an acceptable score in Unified Tertiary Matriculation Examination (UTME). The UTME subjects shall be Mathematics, Physics, Chemistry and Use of English.

1.4.2   Admission Requirements for Direct Entry

For Direct Entry, candidates must have passes in Mathematics, Physics and Chemistry at GCE 'A' level or equivalent. Holders of ND and HND in Engineering disciplines at minimum of Upper Credit level are eligible for consideration for admission into 200 and 300 levels respectively. In addition, Direct Entry candidates must have passes at credit level in the Senior Secondary School Certificate examination or GCE 'O' Level in five subjects including Mathematics, English Language, Physics, Chemistry.

1.4.3   Minimum Duration

The minimum duration of engineering programmes is five academic sessions for UTME candidates who enter with Senior Secondary School Certificate or GCE 'O' Level qualifications. Direct Entry candidates with relevant passes in Mathematics, Physics and Chemistry at GCE 'A'

Level, ND holders with minimum of Upper Credit or equivalent will spend a minimum of four academic sessions provided that they satisfy all the other University requirements. HND holders with Distinction or Upper Credit will spend a minimum of three years.

1.4.4   Name of Degree Programmes

The list of the engineering programme currently offered at the Faculty of Engineering, Federal University Wukari includes:

   (i) Bachelor of Engineering (B.Eng) Agricultural Engineering

   (ii) Bachelor of Engineering (B.Eng) Computer Engineering

   (iii) Bachelor of Engineering (B.Eng) Chemical Engineering

1.5   Graduation Requirements

Before a student is qualified to graduate, he/she must take and pass the minimum credit units specified in his/her programme. This includes the passing of all compulsory General Studies Courses, Entrepreneurship courses and the Industrial Training Courses. Maximum duration for graduation is one and a half time the minimum duration.

1.5.1   Degree Classification

The following regulations shall govern the conditions for the award of a degree:

   i.   Candidate admitted through the UTME mode shall have registered for the minimum credit units of courses in his/her discipline during the 5-year degree programme.

   ii.   Candidates must have registered and passed all compulsory and required courses as well as the number of elective courses specified for the programme.

The determination of the class of degree shall be based on the Cumulative Grade Point Average 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 as summarized in Table 1. It is important to note that CGPA shall be calculated and expressed correctly to two decimal places. The maximum length of time allowed to obtain a degree in the Faculty shall be fifteen semesters for the 5-year degree programme, twelve semesters for 4- year degree programme and nine

semesters for students admitted as direct entry students at 300 level. For extension beyond the maximum period, a special permission of Senate shall be required on the recommendation of the Departmental and Faculty Boards.

Table 1: Degree classification

Cumulative Grade Point Average (CGPA)	Class of Degree
4.50 – 5.00	First Class (Hons)
3.50 – 4.49	2nd Class Upper (Hons)
2.40 – 3.49	2nd Class Lower (Hons)
1.50 – 2.39	3rd Class (Hons)
1.00 – 1.49	Pass

1.5.2 Student Performance Standards

(a) Students will be expected to register for between 15 -24 credit Units per semester.

(b) The minimum CGPA to proceed from 100 - 200 Level shall be 2.00

(c) From 200 - 500 Level, the minimum CGPA to proceed to the next Level shall be 1.00.

1.5.3 Probation

A student whose Cumulative Grade Point Average is below 1.00 at the end of a particular year of study, earns a period of probation for one academic session. A student on probation is allowed to register his failed courses at that level and lower levels only. A student can be on probation only once in a Programme.

1.5.4 Withdrawal

A candidate whose CGPA is below 2.0 at the end of one hundred level (100L) would be withdrawn from the Faculty. A student with CGPA less than 1.00 at the end of probation year would be withdrawn from the Programme at other levels. However, in order to minimize waste of human resources, consideration should be given to transfer to other programmes within the University.

1.5.5 Students on Transfer

Students with a CGPA of 3.50 and above from Science-based Faculties who desire to transfer into any of the programmes in Engineering at 200L shall be considered based on merit and relevance of Courses already taken and passed.

Students who transfer from other Universities with a CGPA of not less than 3.50 shall be credited with only those courses, deemed relevant to the programme. Such students 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 Department; provided that no student shall spend less than two sessions (4 semesters) in order to earn a 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 Department and Faculty.

1.5.6 Course Credit System

Engineering programmes shall be run on a modularised system, commonly referred to as Course Unit System. All courses would 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 would be attached to each course. One credit is equivalent to one hour per week per semester of 15 weeks of lectures or 2 hours of tutorials or 3 hours per week of laboratory/studio work per semester of 15 weeks.

1.5.7 Grading of Courses

Grading of courses shall be done by a combination of percentage marks and letter grades translated into a graduated system of Grade Point as shown in Table 2

Table 2: Grade point system

Mark %	Letter Grade	Grade Point
70 – 100	A	5
60 – 69	B	4
50 – 59	C	3
45 – 49	D	2

40 – 44	E	1
< 40	F	0

1.5.8 Grade Point Average and Cumulative Grade Point Average

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 Units x Grade Point (TUGP) by the total number of units (TNU) for all the courses taken in the semester as illustrated in Table 3.

The Cumulative Grade Point Average (CGPA) over a period of semesters is calculated in the same manner as the GPA by using the grade points of all the courses taken during the period.

Table 3: Calculation of GPA or CGPA

Course	Units	Grade Point	Units x Grade Point (TUGP)
C_1	U_1	GP_1	U_1 x GP_1
C_2	U_2	GP_2	U_2 x GP_2
-	-	-	
-	-	-	
C_i	U_i	GP_i	U_i x GP_i
-	-	-	
-	-	-	
C_N	U_N	GP_N	U_N x GP_N
TOTAL	**TNU**		**TUGP**

Note: GPA =TUGP/TNU

1.6   Evaluation

1.6.1   Techniques of student assessment

(a) **Practicals**

By the nature of the disciplines in Engineering, laboratory practicals are very important in the training of the students. To reflect this importance of practical work, a minimum of 9 hours per week (3 credits) should be spent on students' laboratory practicals. Furthermore, it is very important to determine performance of the student in the practical component of the programme. These practicals must follow the trend in the current development of the programme.

(b) Tutorials

There should be one hour of tutorial for every four hours of lecture. Thus, a course of one credit unit should comprise 12 hours of lecture and three hours of tutorials.

(c) Continuous Assessments

Continuous assessment shall be done through essays, tests, and practical exercises.

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

(ii) For courses which are partly practical and partly theoretical, scores from continuous assessment shall constitute not less than 50% of the final marks. This is also applicable to Engineering Drawing courses.

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

(d) Examinations

In addition to continuous assessment, final examinations should normally be given for every course at the end of each semester. The final grade would be based on the following breakdown.

Final Examination: 40% - 70%

Continuous assessment (Quizzes, Tutorials, Homework, Tests): 30% - 60%

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

(ii) A written examination shall normally last a minimum of one hour for one-unit course.

1.6.2 External Examiners' System

The external examiner system would be used only in the final year of the undergraduate 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.

1.6.3 SIWES Rating and Assessment

In Engineering education, industrial attachment is very crucial. The minimum duration of this attachment should be 34 weeks (one semester and 2 long vacations) and would be broken into the following modules: Students Work Experience (SWEP) Programme (10 weeks – long vacation); Students Industrial Work Experience Scheme (SIWES) (24 weeks, one semester plus long vacation).

To make the training effective, it is important that the students learn how to operate some of the ordinary machines and tools they will encounter in the industry before they go for the attachment. Therefore, they would start with SWEP, which is conducted in the Faculty Workshops, under strict industrial conditions. On successful completion of SWEP, the Students Industrial Work Experience Schemes would be done in industries under strict industrial conditions and supervision.

Normally, industrial attachment would be graded, and no student should graduate without passing all the modules of the attachment and this should be used in degree classification.

1.6.4 Students' Evaluation of Courses

There is an established avenue put in place offering opportunity to students to evaluate courses delivered to them at the end of each semester. This is an integral component of the course credit system, serving as feedback mechanism for achieving the following:

(i) Improvement in the effectiveness of course delivery.

(ii) Continual update of lecture materials to incorporate emerging new concepts.

(iii) Effective usage of teaching aids and tools to maximize impact of knowledge on students.

(iv) Improvement in students' performance through effective delivery of tutorials, timely in presentation of continuous assessment and high-quality examination.

In order to achieve effective learning, all students should normally be permitted to evaluate those courses registered at the end of each semester, preferably before the final semester examinations. It is very important that students' evaluation of courses be administered fairly and transparently through the use of well-designed questionnaires, maintain confidentiality demanded by such exercise and apply their scientifically processed outcome to improving effective course delivery in all ramifications.

1.7 Learning Outcomes for Engineering Programmes in Nigeria

A graduate of an engineering programme accredited by COREN is expected to have:

(i) Good knowledge of Mathematics, basic and engineering sciences relevant to his/her engineering discipline.

(ii) Ability to analyze problems and find engineering solutions to the problems.

(iii) Ability to carry out investigations.

(iv) Good knowledge of the ethics of engineering profession (Engineers Code of Conduct)

(v) Proficiency in using Standards, Codes and modern information and communication technology tools in engineering practice.

(vi) Some knowledge of Humanities and Social Sciences to help him/her understand the cultural milieu in which he/she is to operate.

(vii) Ability to consider the environment and sustainability in finding solutions to problems.

(viii) Ability to work in isolation or in a team.

(ix) Good oral and written communication skills.

1.8 Categories of Courses Taken at Undergraduate Level

1.8.1 Core/Compulsory Course

A course which every student must compulsorily take and pass in any programme at a particular level of study.

1.8.2 Required Course

A course that you take at a level of study and must be passed before graduation.

1.8.3 Elective Course

A course that students take within or outside the faculty. Students must pass all elective courses before they can graduate

1.8.4 Optional Course

A course which students can take based on interest and may count towards the minimum credit unit required for graduation.

1.8.5 Pre-requisite Course

A course which student must take and pass before taking a particular course at a higher level.

Minimum and Maximum Credit Load Per Semester

The Minimum credit load per semester is 15, while the maximum is 24.

1.9 Course Credit Unit System

This should be understood to mean a 'quantitative system of organization of the curriculum in which subject areas are broken down into unit courses which are examinable and for which students earn credit(s) if passed'. The courses are arranged in progressive order of difficulty or in levels of academic progress, e.g. Level or year 1 courses are 100, 101 etc. and Level II or Year II courses are 200, 202 etc. The second aspect of the system is that courses are assigned weights through Credit Units.

1.9.1 Grade Point Average (GPA)

Performance in any semester is reported in Grade Point Average. This is the average of weighted grade points earned in the courses taken during the semester. The Grade Point Average is obtained by multiplying the Grade Point in each course by the number of Credit Units assigned to that course, and then summing these up and dividing by the total number of Credit Units taken for the semester.

1.9.2 Cumulative Grade Point Average (CGPA)

This is the up-to-date mean of the Grade Points earned by the student in a programme of study. It is an indication of the student's overall performance at any point in the training programme. To compute the Cumulative Grade Point Average, the total of Grade Points multiplied by the respective Credit Units for all the semesters are added and then divided by the total number of Credit Units for all courses registered by the student.

CHAPTER TWO

UNDERGRADUATE CURRICULUM

2.1 General Science Courses

In the first year, all the students in the faculty of engineering shall take common courses. The general courses to be offered by the students in the faculty of engineering during their first year of study are presented below, subsequently by the detailed course description

2.1.1 100 Level Courses, Codes and Titles

Table 4: First semester general science courses for all engineering students

S/N	Course Code	Course Title	Credits	Status
1	CHM 101	General Chemistry I (Physical & Inorganic Chemistry)	3	Core
2	CHM 107	Practical Chemistry I	1	Core
3	MTH 101	General Mathematics I	3	Core
4	PHY 101	General Physics I	3	Core
5	PHY 103	General Physics III	2	Core
6	PHY 107	Practical Physics I	1	Core
7	CSC 101	Introduction to Computer Science	3	Core
8	GST 101	Communication in English I	2	Core
9	GST 107	Use of Library, Study Skills and Information Communication Technology (ICT)	2	Core
10	GEN 101	Introduction to Engineering Statistics	2	Core
		Total	**22**	

Table 5: Second semester general science courses for all engineering students

S/N	Course Code	Course Title	Credits	Status
1	CHM 102	General Organic Chemistry	2	Core
2	CHM 104	Inorganic Chemistry I	2	Core
3	CHM 108	Practical Chemistry II	1	Core

4	MTH 102	General Mathematics II	3	Core
5	MTH 104	Elementary Vectors, Geometry and Mechanics	3	Core
6	PHY 102	Electricity and Magnetism	3	Core
7	PHY 108	Practical Physics II	1	Core
8	GST 102	Communication in English II	2	Core
9	CSC 104	Computer Programming, I	2	Core
10	GST 108	Communication in French (Elective)	2	Elective
11	GST 110	Communication in Arabic (Elective)	2	Elective
		Total	**21**	

2.1.2   100 Level First Semester Course Contents

These courses are taken from the Faculty of Pure and Applied Sciences, and the General Studies Unit.

CHM 101: General Chemistry I   (3 Credits: LH 45)

Atoms, molecules and chemical reactions. Modern electronic theory of atoms. Electronic configuration, periodicity and building up of the periodic table. Hybridisation and shapes of simple molecules. Valence Forces; Structure of solids. Chemical equations and stoichiometry; Chemical bonding and intermolecular forces, kinetic theory of matter. Elementary thermochemistry; rates of reaction, equilibrium and thermodynamics. Acids, bases and salts. Properties of gases. Redox reactions and introduction to electrochemistry. Radioactivity.

CHM 107: Practical Chemistry I   (1 Credit: PH 45)

Laboratory experiments designed to reflect the topics taught in CHM 101 such as qualitative and quantitative chemical analyses, acid-base titrations. Gravimetric analysis. Calculation, data analysis and presentation. Functional group analysis.

MTH 101: General Mathematics (Algebra and Trigonometry)   (3 Credits: LH 45

Elementary set theory, subsets, union, intersection, complements, Venn diagrams. Real numbers, integers, rational and irrational numbers. Mathematical induction, real sequences and series, theory of Quadratic equations, Binomial theorem, complex numbers, algebra of complex

numbers, the rgand diagram. De-Moiré's theorem, nth roots of unity. Circular measure, trigonometric functions of angles of any magnitude, addition and factor formulae.

MTH 103: Elementary Vectors, Geometry and Mechanics   (3 Credits: LH 45)

Geometric representation of vectors in 1 -3 dimensions, components and direction cosines. Addition and scalar multiplication of vectors and linear independence. Scalar and vector products of two vectors. Differentiation and integration of vectors with respect to a scalar variable. Two-dimensional coordinate geometry. Straight lines, circles, parabola, ellipse, hyperbola, tangent and normal. Kinematics of a particle. Components of velocity and acceleration of a particle moving in a plane. Force, momentum, law of motion under gravity, projectiles and resisted vertical motion. Elastic string and simple pendulum. Impulse, impact of two smooth spheres and asphere on a smooth surface.

PHY 101: General Physics I (Mechanics, Thermal Physics and Waves) (3 Credits: LH 45)

Space and Time, Units and Dimension, Kinematics; Fundamental Laws of Mechanics, statics and dynamics; work and energy; Conservation laws. Moments and energy of rotation; simple harmonic motion; motion of simple systems; Elasticity; Hooke's law, Young's shear and bulk moduli, Hydrostatics; Pressure; buoyance, Archimedes' Principles; Surface tension; adhesion, cohesion, capillarity, drops and bubbles; Temperature; heat; gas laws; laws of thermodynamics; kinetic theory of gases; Sound. Types and properties of waves as applied to sound and light energies. Superposition of waves. Propagation of sound in gases, solids and liquids and their properties. The unified spectra analysis of waves. Applications.

PHY 103: Heat, Sound and Optics   (3 Credits: LH 45)

Temperature, thermometer, heat transfer and PVT surfaces, Kinetic theory, first and second laws of Thermodynamics. Transverse and longitudinal waves and standing waves. Intensity, beats and Doppler effect. Electromagnetic spectrum. Huygen's principle. Images formed by a single surface, thin lenses and aberrations. The eye, optical instrument, interference, single slit diffraction grating and polarization. Malus's law.

PHY 107: Practical Physics I   **(1 Credit: PH 45)**

At least six experiments from the following: use of measuring instruments, viscosity, surface tension, oscillation about an equilibrium position, Hooke's law, moment of inertia, focal length of lenses, refractive index, optical instruments, the sonometer, heat capacity, volume expansion and latent heat. potential difference and internal resistance of cells, use of potentiometer circuit; the metre bridge, simple current measuring instruments. Planck's constants and radioactivity.

CSC 101: Introduction to Computer Science   **(3 Credits; LH 45)**

History of computers. Computer application in commercial and scientific environments, characteristics of computers, classification and types of computers, computer structure and its components. Introduction to software. Input/output peripheral devices, their advantages and disadvantages. Programming and information presentation. Basic instruction in computer, control programs. Transfer of control. Direct and indirect addressing. Instruction format. Translators, Loaders. Program compilation and execution; syntactic and lexical analysis.

GEN 101: Introduction to Engineering Statistics   **(2 Credits: LH 30)**

Statistical Data: their sources, collection and preliminary analysis by tables and graphs. Skewness and Kurtosis. Measure of central tendencies: Mean, weighted mean, standard deviation, mode, median and variance (grouped and ungrouped data). Time series and demographic measures and index numbers. Construction of questionnaires and simple index numbers. Use of random numbers and statistical tables. Inference: Estimation and test of hypothesis. Analysis and presentation of data. Curve fitting and goodness-of-fit tests. Regression and correlation of data (an introduction).

GST 101: Communication in English I   **(2 Credits: LH 30)**

Effective communication and writing in English Language skills, essay writing skills (organization and logical presentation of ideas, grammar and style), comprehension, sentence construction, outlines and paragraphs.

GST 107: **Use of Library, Study Skills and ICT**   **(2 Credits: LH 30)**

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

2.1.3   100 Level Second Semester Course Contents

CHM 102:   **Organic Chemistry**   **(2 Credits: LH 30)**

Historical survey of the development and importance of organic chemistry; nomenclature and classes of organic compounds, Homologous series; Alkanes, and cycloalkanes, alkenes, alkynes; Functional groups; Benzene and aromacity; isolation, purification and identification of organic compounds.

CHM 104:   **Inorganic Chemistry**   **(2 Credits: LH 30)**

Units and measurement in physical chemistry. State of matter and change of state; Gases and their properties. Chemical equilibria; Thermochemistry; Introductory chemical kinetics; Acids, bases and salts; Redox reactions and redox potentials

CHM 108: Practical Chemistry II   **(1 Credit: PH 45)**

Laboratory experiments designed to reflect the topics taught in CHM 102.

MTH 102:   **General Mathematics II (Calculus)**   **(3 Credits: LH 45)**

Functions of a real variable, graphs, limits and idea of continuity. The derivative, as limit of rate of change. Techniques of differentiation, maxima and minima. Extreme curve sketching, integration, definite integrals, reduction formulae, application to areas, volumes (including approximate integration: Trapezium and Simpson's rule).

PHY 102: Electricity and Magnetism   **(3 Credits: LH 45)**

Coulomb's law. Gauss's theorem. Capacitors. Ohm's law. Kirchoff's laws, electrical energy, D.C. bridges and potentiometer. Magnetic effect of current, electromagnetic induction, moving coil and ballistic galvanometer. Multimeter, D. C. And A. C. Meters and generators. Hysteresis. Power in A. C. circuit, semiconductors, conductivity and mobility. Rectification.

GST 102: **Communication in English II**   **(2 Credits: LH 30)**

Logical presentation of papers; Phonetics; Instruction on lexis; Art of public speaking and oral communication; Figures of speech; Précis; Report writing.

GST 108: Communication in French   **(2 Credits: LH 30)**

Introduction to French, Alphabets and numeracy for effective communication (written and oral), Conjugation and simple sentence construction based on communication approach, Sentence construction, Comprehension and reading of simple texts.

GST 110: Basic Communication in Arabic   **(2 Credits: LH 30)**

Introduction to Arabic alphabets and writing systems. Elementary conversational drills. Basic reading skills and sentence construction in Arabic.

CSC 104: Computer Programming I   **(2 Credits: LH 30; PH 45)**

Introduction to computers and computing. Problems solving on computer algorithm, design using flowchart and pseudo-code. Introduction to high level programming languages, Basic and FORTRAN syntax, flow of control, input/output constructs, data types. Programming in FORTRAN. Extensive exercises in solving engineering problems using flowchart and pseudo-code.

2.2 Foundation Engineering Courses

In the second year, all the students in the faculty of engineering shall take common courses. The 200 level courses are the foundation engineering courses designed to expose the students to the fundamentals of the engineering discipline in a broad sense. However, students can take up to 3 credits as electives from their programme of study.

It is believed that exposing engineering students to the fundamentals of the engineering discipline in the second years of their study, equips them with enough knowledge to determine their inclinations in terms of specialization at a later stage.

This view is further strengthened by the fact that an appreciable number of Engineering students have rural backgrounds which limit their perception of Engineering and the sub-disciplines therein. It is believed that after the second year, the wide Engineering horizon would have been sufficiently illuminated for such students, who are now better placed, to make a choice. In addition, a broad-based programme at these foundation levels becomes an asset to its beneficiaries in the future when they are invariably required to play managerial, supervisory and/or executive roles in Engineering areas that may not be strictly their areas of specialization. The common engineering courses to be offered by the students in the Faculty of Engineering during their 200 Levels in their various Departments : Agricultural, Chemical and Computer Engineering are presented below.

2.2.1   200 Level Courses Codes, Titles, and Credit Units (Common Engineering Courses)

Table 6: First semester courses for Agricultural Engineering students

S/N	Course Code	Course Title	Credits	Status
1	EEE 203	Applied Electricity I	2	Core
2	MEE 209	Engineering Drawing, I	2	Core
3	MEE 211	Students Workshop Experience I	1	Core
4	MEE 205	Applied Mechanics I	3	Core
5	MEE 207	Engineering Materials	3	Core
6	EMA 201	Engineering Mathematics I	3	Required
7	CIE 203	Strength of Materials I	3	Core
8	GEN 201	Engineer in Society	1	Required
9	GEN 203	Basic Engineering Laboratory I	2	Required
10	GST 201	Philosophy, Logic and Human Existence	2	Required
11	GST 203	Nigerian Peoples, Culture and Citizenship	2	Required
		Total	**24**	

Table 7: Second semester courses for Agricultural Engineering students

S/N	Course Code	Course Title	Credits	Status
1	EEE 202	Applied Electricity II	2	Core
2	MEE 212	Engineering Drawing II	2	Core
3	MEE 214	Fundamentals of Fluid Mechanics	3	Core
4	MEE 216	Applied Mechanics II	2	Core
5	MEE 218	Engineering Thermodynamics I	3	Core
6	EMA 202	Engineering Mathematics II	3	Required
7	AGE 202	Agricultural and Bio-resources Engineering Concept	1	Core
8	GEN 204	Basic Engineering Laboratory II	2	Required
9	GST 204	History and Philosophy of Science	2	Required
10	GST 206	Peace Studies and Conflict Resolutions	2	Required
11	AGE 200	SWEP I	2	Core
		Total	**24**	

Table 8: First semester courses for Chemical Engineering students

S/N	Course Code	Course Title	Credits	Status
1	GST 201	Philosophy, Logic and Human Existence	2	Core
2	GST 203	Nigerian Peoples, Culture and Citizenship	2	Required
3	GEN 201	Engineer in Society	1	Core
4	CHM 201	Physical Chemistry II	3	Required
5	EMA 201	Engineering Mathematics I	3	Required
6	CIE 201	Strength of Materials	3	Core
7	MEE 205	Applied Mechanics I	3	Core
8	MEE 207	Engineering Materials	3	Core
9	MEE 209	Engineering Drawing I	2	Core
10	MEE 211	Students Workshop Experience I	1	Core
		Total	**23**	

Table 9: Second semester courses for Chemical Engineering students

S/N	Course Code	Course Title	Credits	Status
1	GST 204	History and Philosophy of Science	2	Required
2	GST 206	Peace Studies and Conflict Resolutions	2	Required
3	CHM 232	Organic Chemistry II	3	Required
4	EMA 202	Engineering Mathematics II	3	Required
5	GEN 204	Basic Engineering Laboratory II	2	Required
6	MEE 212	Engineering Drawing II	2	Core
7	MEE 214	Fundamentals of Fluid Mechanics	3	Core
8	MEE 218	Engineering Thermodynamics I	3	Core
9	CHE 202	Chemical Engineering Concept	1	Core
10	CHE 200	SWEP I	2	Core
		Total	**23**	

Table 10: First semester courses for Computer Engineering students

S/N	Course Code	Course Title	Credits	Status
1	CIE 203	Strength of Materials I	3	Core
2	EEE 203	Applied Electricity I	2	Core
3	EMA 201	Engineering Mathematics I	3	Core
4	GEN 201	Engineer in Society	1	Core
5	GEN 203	Basic Engineering Laboratory I	2	Core
6	GST 201	Philosophy, Logic and Human Existence	2	Core
7	GST 203	Nigerian Peoples, Culture and Citizenship	2	Core
8	MEE 211	Students Workshop Experience I	1	Core
9	MEE 205	Applied Mechanics I	3	Core
10	MEE 207	Engineering Materials	3	Core
11	MEE 209	Engineering Drawing I	2	Core
		Total	**24**	

Table 11: Second semester courses for Computer Engineering students

S/N	Course Code	Course Title	Credits	Status
1	EEE202	Applied Electricity II	2	Core
2	EMA202	Engineering Mathematics II	3	Core
3	GEN204	Basic Engineering Laboratory II	2	Core
4	GST204	History and Philosophy of Science	2	Core
5	GST206	Peace Studies and Conflict Resolutions	2	Core
6	MEE212	Engineering Drawing II	2	Core
7	MEE214	Fundamental of Fluid Mechanics	3	Core
8	MEE216	Applied Mechanics II	2	Core
9	MEE218	Engineering Thermodynamics I	3	Core
10	COE200	SWEP I	2	Core
11	COE202	Computer Engineering Concept	1	Core
		Total	**24**	

2.2.2   200 Level First Semester Course Contents (Common Engineering Courses)

CIE 203/201:   Strength of Materials   (3 Credits: LH 45)

Consideration of equilibrium; composite members, stress-strain relation. Generalized Hooke's law. Stresses and strains due to loading and temperature changes. Torsion of circular members. Shear force, bending moments and bending stresses in beams with symmetrical and combined loadings. Stress and strain transformation equations and Mohr's circle. Elastic buckling of columns.

EEE 203:   Applied Electricity I   (2 Credits: LH 30)

Fundamental concepts - Electric fields, charges, magnetic fields. current, B - H curves Kirchhoff's laws, superposition. Thevenin, Norton theorems, Reciprocity, RL, RC, RLC circuits. DC, AC bridges, Resistance, Capacitance, Inductance measurement, Transducers, Single phase circuits, Complex J - notion, AC circuits, impedance, admittance, susceptance.

EMA 201: Engineering Mathematics I   (3 Credits: LH 45)

Limits, Continuity, differentiation, introduction to linear first order differential equations, partial and total derivatives, composite functions, matrices and determinants, Vector algebra, Vector calculus, Directional Derivatives.

GEN 201: Engineer in Society   **(2 Credits: LH 30)**

Philosophy of Science and Engineering. History of Engineering and Technology. The Engineering profession – Engineering literacy professional bodies and engineering societies. Engineers' code of conduct and ethics. Engineers and nation building - economy, politics, business, safety in Engineering and introduction in Risk analysis, invited lecturers from professionals.

GEN 203: Basic Engineering Laboratory I   **(2 Credits: PH 90)**

Laboratory investigation and report submission for selected experiments and project in Applied Mechanics I, Applied Electricity I, Engineering materials and Strength of materials.

MEE 211: Students Work Shop Experience   **(1 Credit: PH 45)**

Introduction to practices and skills in general engineering through instruction in operation of hand and powered tools for wood and metal cutting and fabrication. Supervised hands - on experience in safe usage of tools and machines for selected tasks.

MEE 205: Applied Mechanics I   **(3 Credits: LH 45)**

Forces, moments, couples. Equilibrium of simple structures and machine parts. Friction. First and second moments of area; centroids. Kinematics of particles and rigid bodies in plane motion. Newton's laws of motion. Kinetic energy and momentum analyses.

MEE 207: **Engineering Materials**   **(3 Credits: LH 45)**

Introduction to electronic configuration, atomic structures, inter-atomic bonding mechanisms, crystal and microstructure. Relationships between structure and properties of metals, alloys, ceramics and plastics. Principles of the behaviour of materials in common environments. Fabrication processes and applications.

MEE 209: Engineering Drawing I   **(2 Credits: LH 15; PH 45)**

Transfer of lettering, dimensioning, orthographic projection, auxiliary and mechanical sectional view, true lengths, graphical calculus and architectural drawings.

GST 201: **Logic, Philosophy and Human Existence** (2 Credits: LH 30)

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

GST 203: **Nigerian Peoples and Culture** (2 Credits: LH 30)

Study of Nigerian history, culture and arts in pre-colonial times; Nigerian's perception of his world; Culture areas of Nigeria and their characteristics; Evolution of Nigeria as a political unit; Indigene/settler phenomenon; Concepts of trade; Economic self-reliance; Social justice; Individual and national development; Norms and values; Negative attitudes and conducts (cultism and related vices); e-orientation of moral; Environmental problems.

CHM 201: Physical Chemistry II (3 Credits: LH 45)

Ions in Solutions: Bronsted and generalized acid-based concepts; application to aqueous and non-aqueous solvents. Equilibria; strengths of acids bases, pH hydrolysis of salts, buffer actions, acid base indicators, titrations, Concepts of activity, Debye Huckel theory. Conductance measurements. Interactions in electrolyte solutions. Surface Chemistry: Interfacial relationships. Criteria for spreading monomolecular films on water. Adsorption form solution, at gas – solid interface; adsorption isotherms. Classification of colloidal systems. Preparation and properties of lyophilic and lyophobic sols. Ideal solids, glasses and polymers. Colloidal systems, surface energies, wetting, adhesion and contact angles. Insoluble surface films. Micelle formation, Lyophobic and lyophilic properties.

200-Level Second Semester

EEE 202: Applied Electricity II   **(2 Credits: LH 30)**

Basic machines - DC, synchronous alternators, transformers, equivalent circuits. Three phase balanced circuits, PN junction Diode, Transistors, Thyristors FETs, Zener, Rectifiers. Basic control systems, open/closed loop systems. Communications fundamentals, introduction of TV, Radio, Telephone systems.

EMA202: Engineering Mathematics II   **(3 Credits: LH 45)**

Second order differential equations, line integral, multiple integral and their applications, differentiation of integral. Analytical functions of complex variables. Transformation and mapping. special functions.

MEE212: Engineering Drawing II   **(2 Credits: LH 15; PH 45)**

Advanced topics in auxiliary and sectional views, development, and intersection of surfaces, isometric projection, dimensioning and tolerances. Introduction to computer aided graphics. Blue-print reading.

MEE214: Fundamentals of Fluid Mechanics   **(3 Credits: LH 45)**

Properties of fluids, Fluids statics, Basic conservation laws, friction effects and losses in laminar and turbulent flows in ducts and pipes. Dimensional analysis and dynamic similitude, principles of construction and operation of selected hydraulic machinery. Hydropower systems.

MEE 216: Applied Mechanics II   **(2 Credits: LH 30)**

Hooke's law: stresses and strain due to loading and temperature changes. Torsion. Stress

circle. Deflection of beams with symmetrical and combined loadings. Elastic buckling of columns. Shear forces and bending moments. Analytical methods for structures.

MEE 218: Engineering Thermodynamics I   **(3 Credits: LH 45)**

Basic concepts, quantitative relations of Zeroth, first, second and third laws of thermodynamics. Behaviour of pure substances and perfect gases. Ideal gas cycles. Enthalpy concept

GEN 204: Basic Engineering Laboratory II   (2 Credits: PH 90)

Laboratory investigation and report submission for selected experiments and project in Fundamentals of Thermodynamics, Applied Mechanics II, Applied Electricity II and Fundamentals of fluid mechanics.

AGE 200: Students Industrial Work Experience   (2 Credits: 8 weeks)

On the job experience in industry chosen for practical working experience but not necessarily limited to the student's major (8 weeks during the long vacation following 200 level).

AGE202: Agricultural Engineering Concept   (1 Credit: LH 15)

Philosophy, evolution, and ramification of Agricultural Engineering. Expected roles of Agricultural Engineers in power and Machinery; Soil and Water; Processing and Storage; and farm Structures and Environment. Agricultural Engineering vis-a-vis other engineering fields.

GST 204: History and Philosophy of Science   (2 Credits: LH 30)

Man – his origin and nature, Man and his cosmic environment, Scientific methodology, Science and technology in the society and service of man, Renewable and non-renewable resources – man and his energy resources, Environmental effects of chemical plastics, Textiles, Wastes and other material, Chemical and radiochemical hazards, Introduction to the various areas of science and technology. Elements of environmental studies.

GST 206: Peace and Conflict resolution   (2 Credits: LH 30)

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

CHAPTER THREE
FACULTY OF ENGINEERING STAFF LIST

The staff of the Faculty of Engineering are of three categories including Teaching, Technological/Technical and Administrative staff. The list of staff in the Dean's Office and the three Departments in the Faculty : Agricultural, Chemical and Computer Engineering is presented in the following Tables

3.1 List of Staff in the Dean's Office

S/N	Name	Rank	Qualification and Area of Specialization	Phone No.
1	Engr Prof Sam Baba Onoja	Professor Dean	BSc (OAU), M.Eng (UNN), Ph.D. (UNN) Soil and Water Resources Engineering	08053453383 07089723019
2	Engr. Dr. Popoola, Caleb Abiodun	Senior Lecturer Sub-Dean	B.Tech (LAUTECH) M.Sc (UI) PhD (UAM) Production Engineering (Tribology)	08035419710
3	Yunusa Umar	Faculty Officer	BSc (Kwararafa)	08036914904
4	Doris Nwanka	Confidential Secretary I	B.Ed (IAUE, PH)	08066935929
5	Mrs Kande Mairga	Clerical Officer I	WASC	08109476194

3.2 List of Staff in the Department of Agricultural Engineering

Teaching staff

S/N	Name	Rank	Qualification and Area of Specialization	Phone No.
1	Engr. Prof. Sam Baba Onoja	Professor	BSc (OAU), M.Eng (UNN), Ph.D. (UNN)	08053453383 07089723019

			Soil and Water Engineering	
2	Engr. Dr. Ngabea, Shianya Audu	Senior Lecturer Head of Department	B.Eng (FUTY), MSc (UNN), Ph.D. (UNN) Food & Bioprocess Engineering	08038083111; 08024567172
3	Engr. Dr. Abdulhakim Adeoye Shittu	Senior Lecturer	B.Eng (ABU), MSc (ABU), MSc. (Newcastle), Ph.D. (Cranfield) Structural/Reliability Engineering	08063209220; 09023370861
4	Engr. William Joshua Kwari	Lecturer I	B.Eng (UNIMAID), MSc (Glassgow) Civil Engineering (Climate Change, Water Quality and Waste Management)	08061257792
5	Engr. Ambo Mamai Ezekiel	Lecturer I	HND (FTB) PGD (UAM) M. Eng (UAM) Agricultural Engineering (Farm Power and Machinery)	07034890134
6	Engr. Hemen E. Jijingi	Lecturer I	B.Eng (UAM), MSc (ABU) Agric. Engineering	08069451802; 08024347824
7	Engr. Kodak E. Udemba	Lecturer I	M.Sc Agric. Engineering	09091427288
8	Engr. Bassah E. John	Lecturer I	B.Eng (ABU), MSc (UNN) Civil Engineering (Structural Engineering)	07062094244
9	Engr. Ayuba Solomon	Lecturer I	B.Eng (FUTY), M.Eng (BUK) Civil Engineering (Materials and Structures)	08068227651
10	Engr. Bobby Shekarau Luka	Lecturer I	B.Eng (FUTY), M.Eng (ATBU) Agricultural and Biosystems	08066828448

			Engineering (Computational Fluid Dynamics and Food Processing)	
11	Makhai N. Usman	Lecturer I	B.Eng (UNIMAID), M.Eng (UNN) Agricultural Engineering (Soil and Water Engineering)	07038677544
12	Ibrahim B. Mahhamed	Lecturer I	B.Eng (BUK), M.Tech (India) Agricultural Engineering	08069132463
13	Engr. Idris W. Muhammed	Lecturer II	B.Eng (BUK), MTech. (India) Agricultural and Biosystems Engineering	08032241576
14	Usman Mohammed Mumini	Graduate Assistant	B.Eng Mech. Engineering	08037492017
15	Ijapari Deborah Ijasini	Graduate Assistant	B.Eng Civil Engineering	07036141500

Technical staff

S/N	Name	Rank	Qualification	Phone No.
1.	Inusa Adamu	Senior Engineer	B.Eng (UNIMAID) Agric. Engineering	07030354920; 09024594567
2..	Sambo Ali Dauda	Principal Tech.	HND (KADPOLY), PGD (ABU) Agric. Engineering	07067102525
3	Genesis Ishaya	Principal Tech.	HND (COT), PGD (UAM), M.Eng (MAUYola) Agric. Engineering	08137133524
4.	Adamu A. Danladi	Tech. II	HND (KADPOLY) Agric. Engineering	08033614090
5.	Musa Ibrahim	Tech. II	HND (FPTB)	0138288553

	Abubakar		Agric. Engineering	
6.	Biami Rita Sih	Scientific Officer	B.Eng Agric. Engineering	08107459150; 07034666504
7	Sylvester A. Wanje	Tech. II	B.Eng Agric. Engineering	08030581046
8	Samuel Yavini	Senior Engr Workshop Manager	B.Eng Agricultural Engineering	07064198222

Administrative staff

S/N	Name	Present Rank	Qualification	Phone No.
1.	Modozie Ifeoma M.	Administrative officer	M.A (IRSS)	08030981323
2	Naomi Shekarau Masa-Ibi	Admin Officer	B.Sc Economics	07068344085

3.3 List of Staff in the Department of Chemical Engineering
Teaching Staff

S/N	Name	Rank	Qualification	Phone No.
1	Engr. Dr. Onyekwere, Okwuchi Smith	Senior Lecturer	B.Eng (FUTO) M.Eng (MAUYola) PhD (UNIBEN) Industrial Engineering (Process and System Optimization)	08033906099
2	Engr. Dr. Government, Raboni Mike	Senior Lecturer	B.Eng (ESUT) M.Eng (NAU) PhD (NAU) Chemical Engineering (Petrochemical and Polymer Technology)	08135136154
3	Engr. Dr. Popoola, Caleb Abiodun	Senior Lecturer	B.Tech (LAUTECH) M.Sc (UI) PhD (UAM) Production	08035419710

			Engineering (Tribology)	
4	Engr. Aliyu, Ahmed	Lecturer I	B.Eng (FUTMinna) M.Eng (FUTMinna) Chemical Engineering (Material Synthesis and Characterization)	08033576652
5	Engr. Dr. Azodo, Adinife Patrick	Lecturer I	B.Eng (FUTMinna) M.Eng (FUNAAB) PhD (FUNAAB) Mechanical Engineering (Ergonomics and Safety Engineering)	08139513021
6	Engr. Dr. Thaddeus, Julius	Lecturer I	B.Eng (UNIMAID) M.Eng (LONDON) PhD (UNN) Mechanical Engineering (Energy and power)	07039366748
7	Engr. Gin, Abel Williams	Lecturer I	B.Eng (FUTMinna) M.Eng (FUTMinna) Chemical Engineering (Reaction Engineering and Adsorption)	07034863656
8	Engr. Abutu, David	Lecturer I	B.Eng (ABU) MSc (ABU) Chemical Engineering (Biotechnology and Biosystem)	07060410025
9	Engr. Olowokere, John	Lecturer I	B.Eng (FUTMinna) M.Eng (FUTMinna) Chemical Engineering (Material/Environmental Engineering)	07060968330
10	Engr. Odiakaose, Chili	Lecturer I	B.Eng (UAM) M.Eng (MAUYola) Mechanical Engineering (Industrial and Material Engineering)	08163287764
11	Engr. Tanimu, Kogi Ibrahim	Lecturer I	B.Eng (ABU) MSC (ABU) Mechanical Engineering (Production Engineering)	08037480703
12	Engr. Odineze, Chimezie Michael	Lecturer I	B.Eng (ATBU) M.Eng (FUTMinna)	07031254696

			Mechanical Engineering (Environmental Engineering)	
13	Engr. Tsokwa, Tswenma	Lecturer I	B.Eng (UNIMAID) M.Eng (MAUYola) Chemical Engineering (Biochemical and Environmental Engineering)	08065181801
14	Engr. Owhor, Samson Chisa	Lecturer I	B.Eng (RSUST) M.Eng (UAM) Mechanical Engineering (Energy and Power)	08064344429
15	Engr. Ibrahim, Abdul-Alim Gambo	Lecturer II	B.Eng (UNIMAID) MSc (ABU) Chemical Engineering (Process and Environmental Engineering)	07039483093
16	Engr. Akpan, Joseph John	Lecturer II	B.Eng (NAU) M.Eng (Cranfield) Mechanical Engineering (Energy and Safety Engineering)	08037859505
17	Engr. Jibatswen, Titus Yusuf	Lecturer II	B.Eng (UNIMAID) M.Eng (JSTUM) Mechanical Engineering	08035422454
18	Engr. Nwonodi, Roland Ifeanyi	Lecturer II	B.Eng (UNIPORT) M.Eng (UNIPORT) Petroleum Engineering (Drilling Waste Management, Petroleum Geomechanics, Natural Fractures, and Optimization in Pet Engineering)	07038909388
19	Engr. Abdulkareem, Mikail Alhaji	Lecturer II	B.Eng (UNIMAID) M.Eng (BUK) Mechanical Engineering (Optimization and Maintenance of Thermal Power Plant)	08064890462
20	Engr. Mohammed, Muktar Nono	Assistant Lecturer	B.Eng (ABU) MSc (Pannonia) Environmental Engineering	09029447156
21	Pambani, Reuben	Graduate Assistant	B.Eng (FUTMinna) Chemical Engineering	08138588175

22	Zakkiyu, Muhammad Sarkin Baka	Graduate Assistant	B.Eng (UNIMAID) Chemical Engineering	08163207454
23	Adam, U. Musa	Graduate Assistant	B.Eng Mechanical Engineering	

Technical staff

S/N	Name	Rank	Qualification	Phone No.
1	Mazi Clare Chinenye	Principal Technologist	B.Eng (FUTO) Polymer Engineering	08032347293
2	Udom Paul Okon	Senior Technologist	B.Eng (FUTMinna) Mechanical Engineering	07068552415
3	Isaiah Kehinde O.	Senior Technologist	ND (FPA) HND (FPA) Mechanical Engineering	08069083356
4	Aminu Fatai Ayodeji	Scientific Officer I	B.Eng (UNILORIN) Chemical Engineering	08038970082
5	Glory Chukwu	Scientific Officer	B.Tech (RSUST) Petroleum Engineering	08038061619
6	Kalu Chinedu	Technologist I	HND (IMT) Chemical Engineering	08037855357
7	Godwin Abacha Ayashim	Senior Technical Officer	B.Eng (ABU) Chemical Engineering	08065068686
8	Aminullah Zakkariyyah Abdul	Scientific Officer	B.Eng (UNIMAID) Chemical Engineering	08068096803

| 9 | Yunusa Hudu Yunusa | Scientific Officer I | B.Eng (ABU) Chemical Engineering | 08084747108 |

Administrative staff

S/N	Name	Rank	Qualification	Phone No.
1	Yahaya Ahmed Dahiru	Admin Officer (AO)	BSc (NSUK) Psychology	08056410804
2	Angye S. Masa-Ibi	Admin Officer (AO)	ND (KUW) BSc (KUW) Political Science/International Relations.	07033257582
3	Esther Emma Dikeh	Assistant Registrar (AR)	BA (UNIPORT) Theatre Art	08143998124
4	Mietuede Dere Teddy	Admin Officer	BA (GHANA) Human Resource Management	08104288285
5	Onyemaechi, Cordelia Chika	Senior Executive	HND (BSPU) BSc (NOUN) Entrepreneur & Business Management	08069104694

3.4 List of Staff in the Department of Computer Engineering

Teaching staff

S/N	Name	Rank	Qualification	Phone No.
1.	Engr. James Okpor	Lecturer I	Diploma (UNIBEN) B.Eng (UNIBEN) M.Eng (UNIBEN) Computer Engineering	07032504557
2.	Dr. Francis Chinda Emmanuel	Lecturer I	B.Eng (Unimaid) MSc (Nottingham) PhD (UTP)	07062026523
3.	Engr. Dr. Olajide Blessing Olajide	Lecturer I	B.Tech. (LAUTECH) PGD Education (NOUN) M.Tech. (LAUTECH) PhD (LAUTECH) Computer Engineering	08136207643
4.	Abubakar Audu	Lecturer II	B.Sc. (University of Northern IOWA)	09068275586

			M.Sc. (North Carolina University),	
5.	Awudu W. Shehu	Graduate Assistant	B.Eng. (UNIMAD) M.Eng. (UNIUYO) Computer Engineering	08060038185
6.	Falade Mutiu Bolarnwa	Graduate Assistant	B.Eng. (FUTMinna) M.Eng (FUOYE) Elect. and Computer Engineering	08060495390
7.	Yusuf Ayuba	Graduate Assistant	B.Eng (UNIMAID) Computer Engineering	07038657038
8.	Murtala Ali Abdullahi	Graduate Assistant	B.Eng (KSU) Elect. Engineering	08030628054

Administrative staff

S/N	Name	Rank	Qualification	Phone No.
1.	Obegu Maria Zake	Assistant Registrar	B.Sc. Business Administration (Kwararafa University)	07069489090
2.	Aliyu Fatima Akanza	Assistant Registrar	**B.A** History (Nasarawa State University)	08037659549