DEPARTMENT OF HUMAN PHYSIOLOGY

FACULTY OF BASIC MEDICAL SCIENCES

COLLEGE OF HEALTH SCIENCES

BAYERO UNIVERSITY, KANO

BSc HUMAN PHYSIOLOGY STUDENTS' HANDBOOK

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GENERAL STATEMENT ON REGULATIONS

The regulations in this handbook only complement the Bayero University regulations for undergraduate studies; these specific regulations are without prejudice to all existing regulations for undergraduate studies in Bayero University, Kano.

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Forward

It is my pleasure to write a forward to this prospectus- the first edition of the BSc Human Physiology Students Handbook. Human Physiology Department has a relatively long history spanning about three decades, mainly engaged in teaching physiology to medical students. Fortunately, the BSc program came to being with the admission of the first set of students about three years ago at the beginning of the 2013/2014 session. It is paramount at this point to make available this document containing important information about this new and promising program.

The Handbook contains information about the program and the Department. One can find brief history of the Department, admission and graduation requirements, detailed list and description of courses, as well as the profile of teaching and non-teaching staff among others.

Importantly for the students, information on rules and regulations governing the conduct of examinations, and how the mentor-mentee program takes you closer to your lecturers for guidance and counseling can be found. More information is available in the University and Faculty Handbooks. “Information is power”. Students are urged to take the opportunity provided by the Handbook to ensure that the intended educational sojourn in the department is as smooth as possible.

I welcome all students to this great Department and hope you make a successful journey into a bright future through Physiology.

Dr. Isyaku Umar Yarube
MD (Medicine), M.Sc, PGDE, Ph.D (Human Physiology)
Head, Department of Human Physiology

Brief History of the Department

The Federal Government of Nigeria established Bayero University, Kano (BUK) in October, 1977, with six others, as a second generation University. At inception, the University had four Faculties, namely, Arts and Islamic Studies, Education, Science, and Social and Management Sciences. Subsequently, Faculties of Law and Technology were established in October 1978 and October 1979, respectively. Faculty of Medicine came into existence in October 1985 when Pre-Medical Students were enrolled in its programs during the 1984/1985 academic session. The undergraduate program for medical training started during the 1986/87 academic session.

The 1986/1987 session marked the beginning of Physiology Department. Professor Shamsuddeen Alausa, a community physician and the pioneering Dean, Faculty of Medicine, was the coordinator/overseer of the Department. The Department then had only one staff on ground- Mrs Veena Sood, who was appointed as Tutor II in 1986. Mr. and Mrs. Duraisamy joined the Department as visiting lecturers from University of Ibadan. They were appointed fulltime Senior Lecturers a year later in August, 1989. Mr. Balagurunathan Duraisamy became the Ag. Head of Department in 1990, and served until 21997. Dr. (Mrs.) Zulleat M. Ofuya served the Department on Sabbatical as Senior Lecturer from University of Ibadan from February, 1996 to March 1998. She was appointed as the Ag. Head of Department in 1997. Meanwhile, many staff were recruited and enlisted for the staff development program. This has made it possible for them to acquire higher degrees and advance through the ranks.

Dr. A.A.U. Dikko served as Head of Department from 1998 - 2005. Hassan A. Dikko headed the Department in the period August, 2005 to January, 2010. Dr. M.M. El-Khashab joined the Department as visiting Associate Professor from Ahmadu Bello University, Zaria, in 2004. He and became a permanent staff and was appointed as Professor the following year. In 2012 the Department got its first '*indigenous*' Physiology Professor with the appointment of Dr. A.A.U. Dikko as Professor of Human Physiology.

The Department was headed by Professor M.M. El-Khashab in 2010 - 2012 and M.A. Salim in 2012 – 2016. The current Head of Department, Dr. I.U Yarube, commenced his tenure in April, 2016.

Since its inceptions and for many years afterwards, the Department was fully engaged with teaching Physiology to Medical Students. Subsequently, students of Physiotherapy and other Allied Health Sciences (Nursing, Medical Laboratory Science and Radiography) joined in 2002/2003 and 2008/2009 sessions, respectively. The first set of students for the BSc Human Physiology program commenced their studies in the 2013/2014 session with courses in the Faculty of Science, and started Physiology courses at 200 level a year letter. Currently, these pioneer students have just completed the

SIWES program at the end of 300 level, and are to start their final year of studies in the up-coming 2016/2017 academic session.

SECTION ONE

1.0 PHILOSOPHY OF THE PROGRAM

The philosophy of the undergraduate physiology program is to train students in theoretical, practical and applied physiology to make such graduates suitable to utilize the basic knowledge for future problem solving and other applications such as practice of medicine, other health sciences or research practice. The graduate should be able to function as entrepreneur whether in public service or self-employed.

1.1 OBJECTIVES OF THE PROGRAM

i. To train students to acquire basic knowledge of physiological principles.
ii. To train students to acquire sufficient practical knowledge and practical skills in experimental physiology.
iii. To train students to have knowledge of applied physiology as used in medicine, pharmacy, nursing, veterinary medicine, health-related industry, research centres and sport institutions.
iv. To train students who will be able to apply the knowledge of physiology to life situations.
v. To train students to acquire knowledge sufficient enough for them to pursue further studies in medicine and related fields of specialization.
vi. To train students who can adapt themselves after schooling, to various life situations including entrepreneurship.
vii. To provide comprehensive training in basic and applied physiology for the graduates to be employed as lecturers in teaching institutions, scientists in research laboratories, or clinical assistants for diagnostic and other services in hospitals.

1.2 NEEDS ASSESSMENT

With the growing number of College of Medical and Health Sciences as well as other health and allied courses in Nigeria, the need for lecturers in Human Physiology is on the increase. Currently there is inadequate number of academically qualified individuals to teach Human Physiology in many tertiary educational institutions in Nigeria.

The BSc. Human Physiology programme is designed to provide expertise in the subject to address the aforementioned need in Nigeria and other African countries. The primary focus of the course is to produce potential lecturers to serve the need of the universities after undergoing postgraduate training in Human Physiology. The program should also provide staff with the required expertise to run side laboratories in hospital wards or diagnostic units such as ECG room.

1.3 THE DEGREE

The degree is a classified, gradable degree based on course system and grade point average. Thus a course credit system from level one to level four, where the courses are arranged in progressive order, broken down into examinable course units for which students earn credits if passed.

The arrangement and progressive order of the courses are in the manner of levels of academic progress from level 100 to 400. This is done taking into account most of the courses are pre-requisites, or co-requisite with others, both intradepartmental and interdepartmental.

1.4 COURSE DURATION AND NOMENCLATURE

The degree is titled BSc. Human Physiology. The duration is minimum of four and maximum of six years for U.M.E candidates, and minimum of three and maximum of five years for D.E. candidates.

1.5 COURSE EVALUATION AND PROGRESSION

a) *Course credits units are assigned to courses to weigh them. One credit unit means*:
   i) One hour of lecture per week per semester.
   j) Two hours of seminar per week per semester.
   k) Three hours of laboratory practical, field work, or clinical session per week per semester.

b) Evaluation:

i) A grading system that uses letters A - F and numbers 0 - 5 system is adopted.

j) Percentage scores, letter grades, grade point average (GPA), cumulative grade point average (CGPA) and classes of degrees are shown below in table 1.

Table 1.1: Letter grades, grade point average, cumulative grade point average and classes of degrees.

The Relative (fixed) Score (%)	Letter Grade	Grade Point
70-100	A	5.0
60-69	B	4.0
50-59	C	3.0
45-49	D	2.0
0.0-44	F	0.0

k) Minimum Level of Earning Credits: The minimum pass is 45% or letter D, or grade point of 1.5. The minimum CGPA required for graduation 1.5 and a total of 130 credits need to be earned including university courses.

l) *Continuous Assessment (CA):* In addition to semester examination CA should be administered up to 40% of total weight of the course. The CA could be by means of informal orals, or inspection assessments in workshops, and part of laboratory/clinical assessments may be applicable. The nature of CA decided must be informed to the class at the beginning of the course.

1.6 PROGRESSION

The progression from 100 level through subsequent levels up to final 400 levels will follow normal university course credit semester system for a gradable course, with probation, withdrawal, spill-over and carry over, detailed as follows:

i. **Probation**

Probation status is assigned to student whose academic performance falls below an acceptable standard. A student whose CGPA is below 1.5 earns probation for at least one session.

ii. **Withdrawal**

A candidate who was previously on probation and earned CGPA less than 1.5 should be recommend for withdrawal.

iii. **Repeating Failed Courses**

Subject to the conditions for withdrawal and probation, a student failing an examination may be allowed to repeat the failed course unit(s) at the next available opportunity provided that the total number of credit units added to the semester credit load does not exceed six credits.

1.7 EXTERNAL EXAMINER SYSTEM

External examiners should come in the final year of the program to assess final year courses and projects and carry out oral examinations. They will also certify the overall performance of graduating students.

1.8 ENTRY QUALIFICATION

i. Credit passes in Senior Secondary School Certificate Examination in English, Mathematics, Biology, Chemistry and Physics, with appropriate UTME Score.
ii. Advance Level passes in Chemistry, Physics (or Mathematics), and Biology (Zoology) with five credits in ordinary level, including English and Mathematics.
iii. Diploma in Laboratory Science (Physiology, Biochemistry, Pharmacology and Chemical Pathology) at credit level.
iv. Any other relevant qualification as may be determined by the University.

1.9 COURSE STRUCTURE

First Semester 100 Level

Code	Course Title	Credit Units
BIO 1201	General Biology I (Zoology)	2
BIO 1203	General Biology III (Botany I)	2
CHM 1241	Organic Chemistry	2
CHM 1231	Inorganic Chemistry	2
PHY 1210	Mechanics	2
PHY 1220	Electricity and Magnetism	2
PHY 1170	Practical Physics I	1
MTH 1301	Elementary Mathematics I	3
GSP 1201	Use of English	2
		18

Second Semester 100 Level

Code	Course Title	Credit Units
BIO 1202	General Biology II (Zoology IV)	2
BIO 1204	General Biology IV (Botany II)	2
CHM 1251	Physical Chemistry	2
CHM 1261	Practical Chemistry	2
PHY 1230	Behaviour of Matter	2
PHY 1180	Practical Physics II	1
MTH 1303	Elementary Mathematics III	3
GSP 1202	Use of Library, Study Skill and ICT	2
		16

First Semester 200 Level

Code	Course Titles	Credit Units
ANA 2211	Gross Anatomy of Upper and Lower Limbs	2
ANA 2121	Embryology and Genetics I	1
ANA 2131	Histology I	1
PYS 2201	General Principles and Cell Physiology	2
PYS 2203	Excitable Tissue Physiology	2
PYS 2105	Autonomic Nervous System	1
PYS 2207	Blood and Body Fluids	2
PYS 2309	Cardiovascular System	3
PYS 2111	General Immunity	1
PYS 2113	Practical Physiology I	1
BCH 2201	General Biochemistry I	2
PCL 2201	General Pharmacology I	2
GSP 2206	Peace Studies and Conflict Resolution	2
CSC 2201	Introduction to Computer Science	2
		24

Second Semester 200 Level

Code	Course Title	Credit Units
ANA 2202	Gross Anatomy of Thorax, Abdomen, Pelvis, and Perineum.	2
ANA 2112	Embryology and Genetics II	1
ANA 2122	Histology II	1
PYS 2302	Respiratory Physiology	3
PYS 2204	Renal Physiology	2
PYS 2106	Skin Physiology and Metabolism	1
PYS 2108	Water, Electrolytes and Acid-base Balance	1
PYS 2210	Gastro-Intestinal Physiology	2
PYS 2112	Liver and Biliary Physiology	1
PYS 2114	Practical Physiology II	1
BCH 2203	General Biochemistry II	2
MCB 2202	General Microbiology II	2
PCL 2202	General Pharmacology II	2
GSP 2202	Foundation of Nigerian Culture	2
GSP 2205	Logic and Philosophy	2
CSC 2302	Application of Computer Science	3
		28

First Semester 300 Level

Code	Course	Credit Units
ANA 3201	Gross Anatomy of Head and Neck	2
ANA 3241	Neuro-anatomy	2
PYS 3301	Endocrine Physiology	3
PYS 3203	Reproductive Physiology	2
PYS 3205	Neurophysiology I	2
PYS 3207	Neurophysiology II	2
PYS 3209	Neurophysiology III	2
PYS 3211	Special Senses	2
PYS 3213	Sports and Exercise Physiology	2
PYS 3115	Laboratory Teaching and Instrumentation I	1
PYS 3117	Practical Physiology III	1
EEP 3201	Entrepreneurship and Innovation	2
		23

Second Semester 300 Level

Code	Course Title	Credit Units
PYS 3502	Industrial Supervision	5
PYS 3504	University Supervision	5
PYS 3506	Student Report	5
		15

First Semester 400 Level

Code	Course Title	Course Units
PYS 4201	Selected topics: Blood and Immunity	2
PYS 4203	Selected topics: Endocrine Physiology	2
PYS 4205	Selected topics: Neurophysiology	2
PYS 4207	Selected topics: Gastro-intestinal Tract	2
PYS 4209	Selected topics: Cardiovascular Physiology	2
PYS 4211	Selected topics: Respiratory Physiology	2
PYS 4213	Selected topics: Renal Physiology	2
PYS 4215	Environmental Physiology	2
PYS 4117	Comparative Physiology and Adaptation	1
PYS 4119	Laboratory Teaching and Instrumentation II	1
PYS 4221	Research Methods and Skills in Physiology	2
PYS 4223	Biostatics	2
		22

Second Semester 400 Level

Code	Course Title	Course Units
PYS 4602	Project	6
PYS 4304	Comprehensive Review of Physiology I	3
PYS 4306	Comprehensive Review of Physiology II	3
		12

1.10 DESCRIPTION OF COURSES

PYS 2201 General Principles and Cell Physiology

Introduction to Physiology and its place in Medicine. Homeostatic, concept of balance and control system. Composits cells, and its organics, cellmembrance and its functions. Transport mechanism across biological membranes. Basic cell signaling, hormone, paracrine and autocrine memrane potential.

PYS 2203 Excitable Tissues

Basis of RMP, AP, Graded potentials, synapses types, mechanism and properties, neuromuscular junction. Mechanisms of skeletal muscle contraction, structure of skeletal muscle, types of muscle fibres, types of contraction, excitability changes, ionic changes, mechanical changes, Metabolic changes, thermal changes. Fate of lactic acid, effect of successive two stimuli tetanus, and effect of loading. Fatigue and its causes, comparison between skeletal, smooth and cardiac muscles.

PYS 2105 Autonomic Nervous System

Autonomic Nervous System: General, origin, distribution and functions of parasympathetic and sympathetic nervous system. Pharmacology of ANS. Classification, comparison between sympathetic and Para sympathetic, sympathetic, origin distribution, functions. Parasympathetic origin distributed and functions. Types of autonomic receptors and receptors pharmacology. Autonomic ganglia. Adrenergic fibers and its receptors distribution. Catecholamines, sympathominetics and sympatholytics. Cholinergic Fibers and receptors. Acetylcholine, sites of release. Cholinergic blockers, ganglionic muscarinic and motor end plate blockers. Nicotinic receptors. Atropine, parasympathominetics and parasympatholytics.

PYS 2207 Blood and Body Fluids

General functions of blood composition of blood, plasma proteins, types, origin and its functions, Red blood cells structure, functions, cell membrane. Haemoglobin and it functions, heamoglobinopathies. Erythropoiesis and factors affecting it. Aneamias, Degrading of Haemoglobin, bilirubin and jaundice, Iron metabolism, Blood coagulation.

Bleeding time and coagulation time. Mechanism of blood coagulation. Hemophilia and purpura, Role of Ca^{2+} and platelets in blood coagulation. White blood cells, classification of WBCs and short notes

PYS 2309 Cardiovascular System

Including anatomical structure of the heart, functional organization system of the CVS, cardiac properties, Cardiac cycle, study of cardiac cycle, ECG, pulse, heart sound, Jagular venous pulse, innervations of the heart, heart rate and it regulation. Cardiac output and factors affecting it. Types of blood vessels and peripheral resistance. Local and nervous regulations of blood flow. Arterial blood pressure, types, factors affecting, maintain and regulate it. Shock and heamorrhage. Types of shock, Effect of heamomhage, edema, types and causes. Pulmonary. Coronary and cerebral circulations. Environmental factors affect CVS. Exercise, flight and high attitudes, Heart failure, myocardial infection.

PYS 2111 General Immunity

Types of immunity, role of lymphocytes. Types of B and T-lymphocytes, immunoglobulins. Humoral and cell mediated immunity. Phagocytosis and opsonization, HLA, Complement system, Antigen-presenting Cells, Cytokines, Interleukin, Basis of immunological diseases.

PYS 2113 Practical Physiology I

Demonstration of Diffusion, Demonstration of Osmosis, Determination of The Number of Red Blood Corpuscle Per Cubic Millimeter of Blood, Determination of The Number of White Blood Cells Per Cubic, Millimeter of Blood, Differential Leucocytes Count, Haemoglobin Estimation: i. Sahli Method ii. Colorimeter Method, Estimation of Packed Cell Volume, Haematological Indices, Experiments On Haemostasis: i. Bleeding Time ii. Clotting Time iii. Prothrombin time, Blood Grouping, Osmotic Fragility of RBCs.

PYS 2302 Respiratory Physiology

Including, introduction, general functions of respiratory passage, factors, protecting respiratory alveoli. I.P.P. it's significant, surfactant, respiratory work, lung volumes and

capacities, vital capacity, its significant and factors affecting it. Dead space, Neural regulation of respiration, peripheral, central and chemical regulation of respiration, centres of respiration in medulla oblongata, hypoxia, cyanosis, effect of high attitude on respiration. Role of respiratory system in Acid Base Balance Effect of exercise on respiration, effect of diving on blood gases.

PYS 2204 Renal Physiology

Introduction, General function of kidney, structure of kidney, nephron structure, brief mechanism of urine formation, GFR, tubular absorption and tubular secretion. Blood flow to kidney auto regulation of blood flow, Juxtaglomerular apparatus, determination of renal blood flow. Clearance, inulin and para amino hippuric acid clearance, glomerular filtration rate, factors affecting it. Proximal convoluted tubules, loop of Henle, distal convolutated tubule. Differences between cortical and medullary nephron, vasa recta, tubular transport maximal for glucose and other chemicals. Role of urea and other electrolytes in concentrating urine, concentration of urine and renal regulation of body water (osmolarity) and diabetes inspidus. Renal regulation of blood (ECF) flow. Micturation reflexes. Innervation of urinary bladder. Role of kidney in acid base balance. Basis of dialysis. Diuretics.

PYS 2106 Metabolism and Skin Physiology

Specific heat production, respiratory quotient, metabolic rate, basal metabolic rate, calorimetry, specific dynamic action. Regulation of body temperature. Exposure to cold, exposure to hot weather, role of hypothalamus in body temperature regulation, including conduction, convection and radiation. Heat stroke, management and presentation. Skin structure and blood flow. Role of skin in body temperature regulation. Physiological functions of skin.

PYS 2108 Water, Electrolytes and Acid-base Physiology

Body water and water balance, Body fluids compartments, Electrolytes Na+, K+, Ca^{2}+ metabolism functions normal content absorption and abnormalities Acids – Bases balance, Buffering systems role of proteins, respiratory system, and kidney in regulation of acid base balance.

PYS 2210 Gastro-intestinal Physiology

Introduction, Salivary gland; types secretions, composition and function of saliva. Mastication, deglutition, phases and protective reflexes. Stomach structure, motility and functions of stomach, secretions and regulations, regulation of its emptying, mechanism of secretion and physiology of peptic ulcer, gastrin and vomiting. C.C.K., other G.I. Hormones Functions of duodenum, jejunum and ileum secretions. Digestion and mechanism of absorption of fat, absorption, motility and functions, proteins, carbohydrate, water and vitamins, large intestine secretions, absorption, motility and functions Defecation. Diarrhoea.

PYS 2112 Liver and Biliary System

Including histological structure of liver, liver functions and liver functions test, jaundice and causes, types of hepatitis. Biliary system, structure of gall bladder, function of gall bladder. Structure and functions of bile salts, bile pigments direct and indirect bilirubin Gall stone and exocrine functions pancreas, hormonal and nervous control of pancreatic secretion, diseases of biliary system and pancreas.

PYS 2114 Practical Physiology II

The Cardiac Cycle in Toad, Effect of Drugs On Cardiac Muscle of Toad, Measurement of Arterial Blood Pressure, Effect of Posture On Arterial Blood Pressure, Effect of Exercise On Arterial Blood Pressure, Recording of Human Electrocardiogram, Cardiac Examination, Spirometry Measurement of Lung Volumes, Vitalography, Urinalysis, Urine Microscopy, Microscopic Examination of Saliva.

PYS 3301 Endocrine Physiology I

General functions of hormones, nature of hormones, mechanisms of action and control. Hypothalamic releasing factors, pituitary glands Anterior pituitary hormones, functions and control. G.H functions and its abnormalities. Other hypothalamic releasing and inhibiting factors, Mechanism of hypothalamus hormonal control. Proopiomelanocortin and MS hormones. Thyroid gland hormones T_3 and T_4 physiological functions and its abnormalities. Adrenal cortex structure and hormones released. Steroid hormones, functions and its abnormalities. Medullary Hormones, ca $^{2+}$ functions and homeostasis,

Hormones regulating serum calcium (PTH, Calcitonin, and DH colecalciterel (Vitamin D). Pancreatic hormones, hormones that regulate glucose, diabetes mellitus. Pineal gland hormones melatonin.

PYS 3203 Reproductive Physiology

Male genital organs, structure of testis, spermatogenesis, hormonal control and temperature, function of testosterone hormone, mechanism of male puberty, sperm and sperm count. Female genital system structure, structure of ovary, graafian follicle, structure of uterus fallopian tubes, mechanism of female puberty, ovarian cycle, oogenesis, menstrual cycle, vaginal cycle, ovulation, fertilization and conception implantation, female contraception hormones, control of pregnancy, factor maintaining pregnancy, formation of placenta, functions and hormones of placenta, delivery, mechanism and hormonal control, hormones acting on female breast, mechanism of lactation, prolactin hormone abnormalities of lactation.

PYS 3205 Neurophysiology I

Sensory system including receptors, types and pathway of sensation, pain sensation, analgesic system, disturbances of sensations thalamus, sensation from the face and causes of headache, sensory cortical areas, sensory functions of cerebral cortex, reaction to sensation.

PYS 3207 Neurophysiology II

Reflex arc, properties of synaptic transmission, properties of reflex arc, general reflexes, spinal reflexes, stretch reflex, muscle tone. Motor system sensory cortical areas including motor cerebral cortex, basal ganglia, cerebellum.

PYS 3209 Neurophysiology III

Temperature control, hypothalamus, limbic system, reticular formation, higher functions of cerebral cortex, learning and memory abnormalities. Speech and its abnormalities, temperature control. Posture reflexes and semi circular canals functions of spinal cord, sleep and EEG mechanism and abnormalities.

PYS 3211 Special Senses

Including eye structure cornea, lens, vitrous humur, ciliary body and aqueous humor structure and functions of retina, visual pathway, accommodation reflex and papillary light reflex, Colour vision, theories of colour vision, visual activity, visual field, area 17, 18, 19 and 8. Mechanism of retina stimulation. Abnormalities and lesions of visual pathway. Hearing including introduction. Physical properties of sound structure of external ear, middle ear and internal cochlea. Structure of cochlea, basement membrane, organ of corti, mechanism of hearing. Hearing pathway, abnormalities of hearing, hearing test, area 42, 22. Sensation linear and rotational, utricles, saccules pathway, equilibrium. Smell sensation including structure of smell receptors mechanism of stimulation, olfactory nerve, olfactory bulb and limbic system. Taste sensation on the tongue, types of taste, mapping of different taste sensation ant 2/3 and post 1/3 path ways, to cortex. Abnormalities.

PYS 3213 Sports and Exercise Physiology

Physical activity, exercise physiology, physical exercise, sport physiology, sport medicine, intensity of exercise, energy expenditure, nervous control of muscle contraction, sources of energy for contraction, ATP, creatine phosphate, muscular glycogen, hepatic glycogen free fatty acids, triglyceride and O_2 cost for muscle contraction, cardiac and vascular response to physical exercise, respiratory response to physical exercise, role of blood in physical exercise, renal response during physical exercise, integrated neural and hormonal control of exercise, regulation of body temperature during physical exercise, physical fitness and its components, nutrition and sport performance, performance enhancers, training and endurance. Health benefits of physical exercise, role of physical exercise in preventions and treatment of disease obesity, diabetes, hypertension, osteoporosis, deep vein thrombosis, labour, post-burn deformity and cancer.

PYS 3115 Laboratory Teaching and Instrumentation I

Handling and maintenance of equipment, laboratory procedures, assisting laboratory technologists in running practical classes for other students. This is focused on the material covered under practical physiology I.

PYS 3117 Practical Physiology III

Recording of Simple Isotonic Muscle Twitch, Effect of Temperature on a Simple Muscle Twitch, Effect of Stimulus Strength on Muscle Contraction, Summation of Muscle Contraction, Genesis of Tetanus, Fatigue in a Nerve – Muscle Preparation, Reflex Action in Toad, Reflex Action in Man, Vision I and II, Hearing and Balance, Ischaemic Pain.

PYS 4201 Selected Topics: Blood and Immunity

Red Blood Cell (RBC) structure and hemoglobin synthesis, RBC production, lifespan and destruction. Anemia; Blood loss anemia, Hemoglobinopathies (sickle cell diseases), thalassemias, Iron deficiency anemia, Megaloblastic anemia and Aplastic anemia. Polycythemia. Blood grouping, blood transfusion reactions and Hemolytic disease of the newborn. hyperbilirubinemia in neonates, kernicterus.

Components of hemostasis, clot formation and dissolution. Thrombocytosis and thrombocytopenia. Hypercoagulability states and thrombosis. Bleeding disorders; Hemophilia and Purpura. Disseminated intravascular coagulation (DIC)

Overview of Leukocytes and lymphoid tissues. Neutropenia, leukemia, lymphoma, plasma cells dyscrasias and multiple myeloma. Overview of innate and adaptive immunity. Immuno-deficiencies; inborn and acquired (AIDS). Autoimmune Diseases, Allergy and Hypersensitivity Reactions. Post- transplantation reaction. Immuno-proliferative diseases. Immunization, cytokines and interleukins.

PYS 4203 Selected Topics: Endocrine Physiology

Overview of the major endocrine glands; hormones classification and mechanisms of action, Primary, secondary and tertiary endocrine disorders. Hyperactivity of anterior pituitary; gigantism and acromegaly. Hypoactivity of anterior pituitary; dwarfism. Abnormalities of posterior pituitary; syndrome of inappropriate hypersecretion of antidiuretic hormones (SIADH). diabetes insipidus. Mixedema; Grave's disease, Goiter Hypothyroidism; myxedema and cretinism. Hyper- and Hypoparathyroidism; Hyper- and hypocalcaemia, tetany. Hyperparathyroidism; hypercalcemia. Osteoporosis, Osteomalacia and Rickets. Diabetes mellitus. Hyperactivity of adrenal cortex; Cushing's syndrome, Hyperaldosteronism and Adrenogenital syndrome. Hypoactivity of Adrenal cortex; Addison's disease and congenital adrenal hyperplasia. Pheochromocytoma.

PYS 4205 Selected Topics: Neurophysiology

Neuro-endocrine control. Pain: causes, types and pathway, central and peripheral analgesic system, disturbances of sensory sensation, control of facial sensation and headache, functions of spinal cord, ascending and descending spinal tracts, stretch reflex and muscle tone. UMN and LMN, lesion, memory- definition, trace, role of sensory association area in memory trace, types of memory, mechanism of memory consolidation, amnesia and Alzheimen's disease, learning- mechanism of learning, centers responsible for experiences. Speech-mechanism, centers, nervous control and abnormalities of speech, postural reflexes, semicircular canals, utricle and saccule, mechanism of head support in space, visual, sensory and psychic areas of cerebral cortex, naming and face identification areas. Role of frontal lobe in thought arrangement, social behavior and decision making. Hypothalamus and limbic system, sleep and wakefulness, reticular activating system, Neuro-degenerative diseases, stroke, EEG.

PYS 4207 Selected Topics: Gastro-intestinal Tract

Saliva- mechanism of secretion and functions. Mechanisms of gastric secretions and their regulation. Mechanism of intestinal secretions and their regulation. Gastric, small intestinal and large intestinal motility. Hypo- and hyper salivation and other disorders of salivary secretions. Dyspepsia. Diarrhea and constipation. Deglutition, mechanisms of daefication.

PYS 4209 Selected Topics: Cardiovascular System

Heart sounds, types of murmurs, pulse their significance and abnormalities. ECG- basis, significance pathophysiology of heart failure, arterial blood pressure- factors affecting maintenance and regulation, functions of blood vessel endothelium of 0_2 and nutrients, blood vessel diameter control, mechanism of trans-capillary transport. Coronary circulation and pathophysiology of *angina pectoris*, cerebral circulation, skin circulation, hemorrhage, types of hemorrhage, shock, pathophysiology of shock mechanism of tissue fluid formation, causes and types of edema. Lymphatic drainage, mechanism of lymph formation. Atherosclerosis of coronary vessels - myocardial infarction.

PYS 4211 Selected Topics: Respiratory Physiology

Physiological functions of upper and lower respiratory tract, surfactant and its significance, intrapleural pressure - mechanism and physiological significance. Lung Volumes and Capacities, Vital Capacity and factors affecting it, Dead space, types and significance, 0_2 and $C0_2$ dissociation curves and factors affecting them, myoglobin dissociation on curve, central and

peripheral mechanisms of inspiration, central control of respiration chloride shift, Hypoxia - types and causes. Cyanosis, effect of high attitude, outer space and diving on respiration, path physiology of bronchial asthma, emphysema, hydrothorax and pneumothorax. Causes and mechanism of cough, hiccup and yawning.

PYS 4213 Selected Topics: Renal Physiology

Renal functions and blood floor. Mechanisms of urine formation- filtration, reabsorption and secretion at glomerulus PCT, LH, DCT and CD (urine formation). Formation of dilute and concentrated urine. Fanconi syndrome, Liddle syndrome, Micturition reflexes. Role of kidney in acid-base balance. Renal function tests. Renal failure and dialysis, Diuretics, nephritic and nephnotic syndromes, acute tubular necrosis, obstructive neuropathy.

PYS 4215 Environmental Physiology

Concept of environment: what constitute an environment for humans and animals; Biometeriology: weather, season, climate; Environmental factors of physiologic significance (physical, chemical, biological, etc) and their sources, means/mechanisms of interaction between the environment and human body; Environment, stressor, stress and adaptation; Physiological regulation and response to stress: neuroendocrine stress mechanism, stress and immunity; Physiological response in special environmental conditions: high altitude, deep sea diving, flying, desert, harmattan; biological and chemical warfare; Thermal biology: thermogenesis, body temperature and thermoregulation – heat gain (environment, metabolism), heat loss (sensible, insensible), physiological adaptation in hot and cold environment, thermotolerance,heat shock proteins; sun stroke and frost bite.

Xenobiotic (drugs, environmental toxins) metabolism, endocrine disruptors, free radicals and oxidative stress, impact of xenobiotics on human body;

Impact of environmental/climate changes on specific organs/systems (kidney, brain, endocrine glands, liver, skin, immunity, adaptation and response to stress, etc); Sanitation and health;

PYS 4117 Comparative Physiology and Adaptation

History of comparative physiology, the Krogh's principle, Methodology of comparative physiology. Comparative physiology of homeostasis and adaptation: acclimation vs adaptation, Behavioural adaptations. Physiological adaptation of camel to heat, Comparative advantages of camel over other domestic animals. Comparative endocrinology: Hormone and Pest Control-Ecdysones as insecticides. Comparative reproductive physiology: Variations in human menstrual

cycle, Events of female animal reproduction, Estrous cycle vs menstrual cycle. Comparative digestive physiology: Classification of various digestive systems, Differences of digestive systems between animal species. Comparative physiology of water and ion physiology: comparative anatomy of kidneys, Osmoregulatory strategies, Excretion. Circulatory systems: Comparative physiology of hearts, Blood and Defense systems.

PYS 4219 Laboratory Teaching and Instrumentation

Handling and maintenance of equipment, laboratory procedures, assisting lab technologists in running practical classes for other students. This is focused on the material covered under practical physiology II.

PYS 4221 Research Methods and Skills in Physiology

Research- an overview, major steps in research, types of research. Literature search: use of conventional library and electronic search of database on the internet. Designing and conducting research: selection and formulation of research problems, topics, questions, hypotheses, aims and objectives; grouping. Research proposal writing: choosing and developing a research topic, components of research proposal - introduction, literature review, materials and methods, referencing, work plan and budget. Writing a research report: components of research project – title, abstract, table of contents, introduction, literature review, materials and methods, results, discussion, limitations, conclusions, recommendations, references and appendix. Ethical issues in research.

PYS 4223 Biostatistics

Data- types of variables, levels/scales of measurement, methods/instruments of data collection. Descriptive statistics: measures of central tendency, measures of variability/dispersion, Data organization and presentation: tables, bar chart, pie chart, line diagram, etc. Sample-explanation, sampling techniques and sample size estimation. Data analysis: use of computer-based statistical packages (Microsoft Excel, SPSS), determination of mean and standard deviation (standard error), comparing means for statistical significance, using data to plot graphs, charts. Inferential statistics - Interpreting results of data analysis: level of significance, confidence interval. Drawing conclusions/inferences from analyzed data.

PYS 4602 Project

Students are expected to undertake a research study, write and submit a project report to the Department under the guidance of an appointed supervisor. The project must be defended before a panel of internal examiners in a seminar presentation.

PYS 4304 Comprehensive Review of Physiology I

Students are expected to undertake a guided self-study to cover general principles and cell physiology, excitable tissue and ANS physiology, blood and body fluids, immunity, cardiovascular and respiratory physiology, sports and exercise physiology renal, water, electrolytes and acid-base physiology. Relevant aspects of applied or pathophysiology are also expected to be covered. There should be a comprehensive examination at the end of the semester.

PYS 4306 Comprehensive Review of Physiology II

Students are expected to undertake a guided self-study to cover metabolism and skin physiology, GIT, liver and biliary physiology, endocrine and reproductive physiology, neurophysiology with special senses, environmental physiology and comparative physiology and adaptation. Relevant aspects of applied or pathophysiology are also expected to be covered. There should be a comprehensive examination at the end of the semester.

1.11 STUDENTS' INDUSTRIAL WORK EXPERIENCE SCHEME (SIWES)

Students' Industrial Work Experience Scheme (SIWES) was initiated by the Industrial Training Fund (ITF) in 1973 to complement the theoretical knowledge acquired in higher institutions of learning with practical experience; the programme is a means and platform through which our students are exposed and prepared for the industrial work situation they are likely to meet after graduation; it also affords students the opportunity of familiarizing and exposing themselves to the needed experience in handling equipment and machinery that are usually not available in the laboratories of the Department of Human Physiology, Bayero University, Kano. Students shall go through this scheme once during the second semester of 300 level.

Students are encouraged to take advantage of the program to acquire industrial experience in hospitals, laboratories, research and other institutions of their choice. The program is expected to improve their learning experiences and allow them gain some practical skills that can improve

their employability after graduation. The Department is looking forward to modify the SIWES program for Physiology students in an effort towards professionalizing the BSc Physiology program.

1.12 THE MENTOR-MENTEE PROGRAM

The Department hosts a mentor-mentee program, which is managed by a committee under the Head of Department. The goal of the program is to bring students closer to their lecturers for proper guidance and counseling to minimize difficulties experienced by students as they pursue their education, as well as maximize the potential of each and every student while in school and in their future carriers afterwards. Students (mentees) are assigned to lecturers (mentors) who serve as an important point of call in addressing any challenges they may encounter. The Department has written guidelines for both the mentor and the mentee. This program is in addition to the crucial services provided by the level coordinators as academic advisors for the assigned set of students.

SECTION TWO

2.0 EXAMINATION REGULATIONS

a) It shall be the responsibility of each student to make sure that he/she is registered for the appropriate examinations and be sure of the dates, times, and venues of the examinations for which he/she is registered; and also ensure that he/she is in possession of any identity document prescribed for the examinations.

b) Level coordinators shall ensure that identity documents are available to students at least two weeks before each examination.

c) Each candidate should be at the venue of examinations at least ten (10) minutes before the advertised time of the examination. He or she is required to supply his/her own writing and drawing instruments; and also required to supply any other examination aids of which the provision is prescribed in the rubric of the question paper, and announced to candidates in advance, as being his/her own responsibility.

d) A student shall bring his/her identity document to each examination and display it in a prominent position on his/her desk.

e) A candidate must show his/her full face; show both ears when asked to do so by the invigilator for the purpose of identification.

f) Any book, paper, document, examination aid (except as may be provided for the rubric of the question paper, and announced to candidates in advance), handbag or briefcase that is brought to the examination venue must be deposited at the invigilator's desk or in a place designated for the purpose, before the start of the examination. In no circumstances must be placed on or near a candidate's writing desk.

g) Each student shall sign-in, by completing a line (raw) on the attendance register, writing his/her registration number, name, answer booklet number, and department, as well as signing his/her signature. Students should be advised to note and remember their serial number (in case there are more than one register) for the ease of signing out.

h) Each student shall also sign out after submitting his/her answer script, by signing the appropriate column of the attendance register.

i) A student shall write his/her registration number, and not his/her name, distinctly on the cover, and on every page of the answer booklet, as well as on any extra sheets used.

j) The use of scrap paper, question paper, toilet tissue paper, etc, for rough work is categorically not allowed. All rough work must be done in answer booklets and crossed neatly through, or in supplementary answer sheets, which must be submitted to the invigilator.

k) A candidate arriving late shall be admitted up to thirty (30) minutes after the start of the examination but he/she shall not be allowed extra time. If he/she arrives more than thirty (30) minutes late but before one-half of the total duration of the examination has elapsed, the invigilator may, at his discretion, admit the late-comer student, when satisfied that, the candidate has good reason for his/her lateness, and provided that no candidate has finished writing his/her examination and gone. No candidates shall be admitted after half the duration of the examination has elapsed. The invigilator shall report on all those admitted late to the Faculty Examinations Officer, who shall recommend to the Board of Examiners, whether to accept the student's paper or not.

l) A student may be permitted by the invigilator, to leave examination room during the course of an examination provided that:-

    i. No student shall normally be allowed to leave during the first thirty (30) minutes or last ten (10) minutes of the examination.

    ii. A student leaving must sign out and hand his script to the invigilator before leaving, if he/she does not intend to return.

    iii. A student who leaves the examination room shall not be readmitted unless throughout the period of his/her absence, he/she has been under the supervision of an invigilator or Examination Attendant.

m) No student shall speak to any other student, except as essential, to the invigilator; or make any noise or disturbance during the examination. Smoking is not allowed in the Examination hall during any examination.

n) A student must not either directly or indirectly give assistance to any other student, copy from or otherwise use his/her papers

o) A student shall not use a mobile phone or any other unauthorized ICT device in the examination hall for any purpose; ***and doing so is an offence.*** All handsets shall be ***switched off and be out of sight.***

p) A student is responsible for protecting his/her work so that it is not exposed to other students.

q) Any student accused of involvement in examination malpractice shall be made to fill in the prescribed form, giving his/her own version of events. A student that fails to fill in the form is denying himself/herself an important opportunity.

r) At the end of the time allotted or allowed to write an examination, each student shall stop writing when instructed to do so, and shall gather his/her scripts together and then remain at his/her desk until all candidates' scripts have been collected, and he/she has been given permission by the invigilator to leave. It shall be the candidate's responsibility to ensure that, his/her answer script(s) is/are collected by a Bayero University official in the examination room before he/she leaves.

s) Except for the printed question paper, a student may not remove from the examination room or mutilate any paper or other materials supplied to him or her.

2.1 ADMISSION INTO EXAMINATION

In order to be admitted into an examination, a student must have been registered for the relevant course, and must satisfy any University and Faculty requirements regarding attendance, the performance of assignments connected with the course taught, and the payment of fees.

A student must have at least a 75% attendance record in order to be eligible to sit for an examination in a course. This provision can only be implemented if the Department is satisfied that proper attendance record has been kept.

SECTION THREE

ACADEMIC MISCONDUCT

3.0 EXAMINATION MISCONDUCT AND LEAKAGES

Candidates for any examination in the University are to conduct themselves properly in and around the examination halls. Deviations from these proper conducts may constitute examination misconducts, which are punishable by the penalties described below.

3.01 Misconduct in Examination Hall Vicinity, Hostels and Other Institutions

For the purpose of this part, the vicinity of an examination hall is considered to be part of the examination hall. Thus, any student caught with unauthorized materials or writing in the vicinity of the examination hall (after the student has seen the question paper) shall be treated as if the materials were found on him/her in the examination hall. Similarly, any student caught cheating in any way in students' hostels or other areas shall be appropriately treated.

For the purpose of this part, any student of the University who commits an offence punishable under this part in any other institution will be treated as if he/she had committed such an offence in the University, and shall therefore be liable for any appropriate punishment.

Examination misconduct cases discovered during the marking of the examination scripts are also subject to appropriate investigations and further necessary action.

3.1 CATEGORIES OF OFFENCES AND PUNISHMENTS

The following are the categories of examination malpractice and leakage offences, as well as the appropriate punishments for the offences:

A. Category of Offences Punishable by Expulsion from the University

i. Impersonating another student, or being impersonated by another person at an examination.
ii. Exchanging names and/or numbers on answer scripts/sheets.
iii. Introduction and use of relevant unauthorized material(s) into the examination hall.
iv. Exchange of materials (such as question papers, examination cards) containing jottings that are relevant to the ongoing examination in the examination hall.
v. Theft and/or illegal removal of examination scripts.

vi. Any kind of mischief likely to hinder the smooth conduct of the examination. For example, causing fire, flooding, or engaging in physical violence.
vii. Collaborating with, or copying from, another candidate.
viii. Cheating outside the examination hall, such as in toilets, hall of residence, etc.
ix. An offence that falls under category B committed by a student who was previously rusticated.
x. Using mobile phones and other ICT devices to access voice or text messages, documents, materials from the Internet, etc, during examinations;
xi. Any offence under this category committed by a student of this University in another institution.
xii. Destruction of, or tempering with, evidence by candidates – including preventing access to electronic devices.
xiii. Any other misconduct deemed by the Senate Committee on Examination Misconduct and Senate to warrant expulsion.

B. Category of Offences Punishable by Rustication

i. Facilitating/Abetting/Aiding cheating by another candidate.
ii. Introduction, but not use, of relevant unauthorized materials to the examination hall.
iii. Using mobile phones and other ICT devices in the examination hall for things unrelated to the ongoing examination.
iv. Acts of misconduct (such as speaking/conversation) during the examination that is likely to disrupt the conduct of the examination.
v. An offence in category C committed by a previously warned or rusticated student.
vi. Any offence under this category committed by a student of this University in another institution.
vii. Any other misconduct deemed by the Senate Committee on Examination Misconduct and Senate to warrant rustication.

C. Category of Offences Punishable by Written Warning

i. Introduction of unauthorized irrelevant materials into the examination hall.
ii. Writing on the question paper.

iii. Failure to switch off mobile phones and other ICT devices, and/or failure to keep them out of sight.

iv. Any offence under this category committed by a student of this University in another institution.

v. Any other misconduct deemed by the Senate Committee on Examination Misconduct and Senate to warrant warning.

D. Offences Punishable by Failure in the Course

i. Any of the offences in categories D and E committed by a student in respect of homework, assignment, and other aspects of the continuous assessment of a course would lead to an 'F' grade in the course.

SECTION FOUR

STAFF PROFILE

ACADEMIC STAFF				
S/No.	**Name**	**Qualification**	**Area of Specialization**	**Rank**
1.	Dr. Isyaku Umar Yarube	MD (Medicine) (Moscow), MSc. (ABU), PGDE (B.U.K), PhD (ABU)	Neurophysiology	Assoc. Prof./HOD
2.	Prof. A.A. Umar Dikko	BSc. (ABU), MSc. (ABU), Mphil, PhD (Southampton)	Endocrine Physiology	Professor
3.	Prof. M.M. El-khashab	MBBCh, MSc. (1993), MD, Dip. Pead. (Cairo)	Cardiovascular Physiology	Professor
4.	Samuel Oduh Odeh	MBBS, MSc. PhD (UNIJOS)	Neurophysiology	Professor (Visiting)
5.	Frank B.O. Mojiminiyi	BSc., MSc., PhD (UNILAG).	Neurophysiology	Professor (Visiting)
6.	Dikko, H.A	BSc. (UNICAL), MSc. (Lagos)	Neurophysiology	Senior Lecturer
7.	Mohammed Ali Salim	BSc. (ABU), MSc. (UNIJOS)	Endocrine Physiology	Senior Lecturer
8.	Dr. Salisu Ahmed Ibrahim	MBBS (Uni. Ilorin), MSc. (ABU), PhD (ABU)	Immunophysiology	Senior Lecturer
9.	Dr. Nafisatu Yusuf Wali	MBBS (UniMaid), M.Sc. (ABU), PhD (ABU)	Endocrine Physiology	Senior Lecturer
10.	Dr. Abbas Bubakar El-ta'alu	MSc. Ph.D (Kharkov)	Human and Animal Physiology	Senior Lecturer
11.	Dr. Mohammed Adamu Abbas	MBBS (BUK), MSc. (Abardeen)	Molecular Genetics	Lecturer I
12.	Dr. Musa Ibrahim Kurawa	MBBS (BUK), MSc. (ABU, 2012)	Neurophysiology	Lecturer I

13.	Dr. Mahdi Dissi Gambo	MBBS, MSc. (BUK)	Environmental physiology	Lecturer I
14.	Dr. Muhammad A.G. Zakariyya	MD (Medicine) (Moscow)	Human Physiology	Lecturer II
15.	Dr. Sani Bello Gwadabe	MBBS, MSc. (BUK)	Human Physiology	Lecturer II
16.	Dr. Shihabuddeen Muhammad	MBBS, MSc. (BUK)	Immunophysiology	Lecturer II
17.	Dr. Ibrahim Mas'ud	MBBS (BUK)	Human Physiology	Lecturer II
18.	Dr. Shahzad Ahmed	MBBS, MSc. (BUK)	Human Physiology	Lecturer II
19.	Dr. Isyaku Mukhtar Gwarzo	MBBS (BUK)	Human Physiology	Lecturer II
20.	Dr. Bashir Wada Yakasai	MBBS (BUK)	Human Physiology	Lecturer II
21.	Dr. Bashir Isah Waziri	MBBS (BUK)	Human Physiology	Lecturer II
22.	Dr. Adama I. Jibril	MBBS (BUK)	Human Physiology	Lecturer II
23.	Ibrahim Suleiman	BSc. (ABU), MSc. (BUK)	Endocrine Physiology	Assistant Lecturer
24.	Yusuf Nasiru Usman	BSc. (ABU)	Human Physiology	Graduate Assistant

LABORATORY TECHNOLOGISTS			
S/ No.	**Name**	**Qualification**	**Rank**

1	Mr. Sunday O.Osayi	OND (UNAAB, 1990); FD (HND UI, 1992); FD (HND NIST, 199O); PGDM (BUK, 2001); MBA (BUK, 2004); HCCS (BUK, 2001).	Chief Technologist Laboratory (In-Charge)
2	AbdussalamMadaki Kwa	OND, (1985); FDC (HND 1988); PGDPPA (BUK 2000); PGDBS(BUK 2004)	Chief Technologist
3	Sani Muhammad	OND (KANOPOLY), 1989); FDC (HND NIST UNIMAID, 1991); PGDPPA (BUK, 1997); MPPA (BUK, 2002); ACCS (BUK, 1999), ADLS (BUK, 2001); CAP I (Alliance De Francais, 2002).	Chief Technologist
4	Basira Musa Idris	OND (2004); BSc. (2008) UNIJOS.	Technologist I
5	Salamatu Muhd Abdullahi	BSc. Physiology (A.B.U Zaria, 2012),	Technologist II
6	Ibrahim Haruna	BSc. (2014) UNIJOS	Technologist II
7	Idris Abubakar	Certificate in Science Lab. Tech. (KADPOLY, 2000); Diploma in Science Lab. Tech. (KADPOLY, 2002); Diploma in Computer Applications (G.F.T., Zaria, 2003); HND in Science Lab. Techn. (KADPOLY)	Technologist II
8	Idris Sani	S.S.C.E (1999) Diploma in Science Lab. Tech. (KADPOLY, 2002); HND in Science Lab. Techn. (KADPOLY)	Technologist II

LABORATORY TECHNICIANS			
1	Tahir Danjuma	Primary Cert. (2000); SSCE (2006); OND (2009) KANOPOLY	Laboratory Technician
2	Rumasa'u Ibrahim Abubakar	SSCE (2004); OND (2008) KANOPOLY	Laboratory Technician
3	Hadiza Bello Aliyu	SSCE (2006); OND (2012) KANOPOLY	Laboratory Technician
4	Musbahu Musa Ahmad	Primary Cert. (1990); SSCE (1998); OND (2007)	Laboratory Technician
5	Bashir Yusuf	Primary School Certificate; NABTEB (S.S.C.E. Equivalent, 2005); Cert. in Science Lab. Techn. (KANOPOLY); Diploma in Science Lab. Techn. (KANOPOLY).	Laboratory Technician

LABORATORY ATTENDANTS			
1	Balarabe Isyaku Kwa	NABTEB (S.S.C.E. Equivalent); Certificate in Motor Vehicle Technologist	Senior Lab. Asst.
2	Sale Musa Kachako	Primary Cert. (1982), Secondary Cert (1988); Nat. Diploma (KANOPOLY, 1997).	Laboratory Asst.
3	TijjaniSa'id D/Iya	Grade II Certificate (1997); SSCE	Laboratory Asst.
4	Muhammad Abdulmajid	Primary. Cert. (1999); SSCE (2005)	Laboratory Asst.
5	Ibrahim Tijjani Abubakar	Primary Cert. (2001); SSCE (2004)	Laboratory Asst.
6	Adamu Aliyu Ya'u	Primary Cert. (2003); SSCE (2010)	Laboratory Asst.

ADMINISTRATIVE STAFF			
1	Sani Garba Gwarzo	35 WPM (KANOPOLY),50 W.P.M. (KANOPOLY); Certificate in Computer Applications (BUK 2002); Certificate in Computer, Capacity Building Programme (BUK, 2004)	Admin. Officer
2	Balarabe Ahmad Kawu	Primary. Cert. (1993); SSCE (1999)	Head Cleaner
3	Aisha Yakubu	Agency for Mass Education (Prim. Cert 2010).	Head Cleaner
4	Abdullahi Aliyu	Primary. Cert. (2001); SSCE (2007), Dip (2011)	Head Cleaner