

DEPARTMENT OF PHYSIOTHERAPY
FACULTY OF ALLIED MEDICAL
SCIENCES
UNIVERSITY OF CALABAR
CALABAR

STUDENTS'
HANDBOOK AND GUIDELINES
FOR THE
BACHELOR IN PHYSIOTHERAPY
(B.PT)

PHYSIOTHERAPY DEGREE PROGRAMME [B.PT] IN THE UNIVERSITY OF CALABAR

THE PHILOSOPHY

The philosophy of this programme is to train and produce dedicated highly knowledgeable and skilled physiotherapists who will continue to search for more knowledge and professional skill and apply the same for the treatment, rehabilitation, prevention, health promotion and other health needs of the patients and the community using physiotherapeutic modalities.

A. INTRODUCTION:

The Department of Physiotherapy offers a five-year programme leading to **Bachelor in Physiotherapy [B.PT]**. Physiotherapy is a health care profession which utilizes physical agents such as heat, light, water, electricity, massage, manipulations, mechanical appliances etc; manual procedures and therapeutic exercises in the treatment and management of injuries and diseases. Physiotherapy is concerned with identifying and maximizing quality of life and movement potential within the spheres of promotion, prevention, treatment/intervention, habilitation and rehabilitation. This encompasses physical, psychological, emotional, and social well being. Physiotherapy involves the interaction between physiotherapist, patients/clients, other health professionals, families, care givers, and communities in a process where movement potential is assessed and goals are agreed upon, using knowledge and skills unique to physiotherapists.

Physiotherapy is that aspect of Medicare that prevents treats and rehabilitates clinical conditions with the use of physical agents. These physical agents include heat, light, electricity, sound, water at varying temperatures, mechanical traction, manipulation and exercise therapy as well as the use of ambulatory aids, prosthesis and orthotics and other assistive devices.

Physiotherapy also involves the use of topical drugs such as anti-inflammatory analgesics and the use of certain ions as in iontophoresis.

The aim of physiotherapy is to maximize the individual's movement potential, reduce pain and consequently improve his/her functional capabilities.

Seven Nigerian universities presently offer physiotherapy as a five-year degree Program resulting in the award of a Bachelor of Physiotherapy (B.PT) degree or a Bachelor of Medical Rehabilitation (B.MR) degree. These universities include the University of Ibadan, Obafemi Awolowo University, University of Lagos, University of Nigeria, University of Maiduguri, Bayero University and Nnamdi Azikiwe University.

Out of these seven universities, three are located in the South-west, two in the South-East and two in the Northern part of the country.

The commencement of a training program in Physiotherapy in the University of Calabar will enable this region of the country have a better physiotherapy training school. It will also help better the Physiotherapy/Population ratio in Nigeria.

As it stands presently, Nigeria boasts of about 2,500 Physiotherapists with as much as a quarter of this number practicing outside the country. Considering the population of Nigeria to be about 140,000,000 (one hundred and forty million) people (2006), it statistically turns out to be a ratio of 1 physiotherapist to 74,667 Nigerians (1 physiotherapist: 74,667 Nigerians). This is glaringly unacceptable.

This programme when commenced will also enable science based Nigerian youths especially those of the South- South descent study Physiotherapy and graduate as professionals thereby increasing the physiotherapy man power in the South-South and Health Sectors.

The Nigerian Medical Rehabilitation Therapists' Registration Board (MRTB) regulates the training and the practice of physiotherapists.

B. OBJECTIVES OF THE PROGRAMME

- i. To produce physiotherapists with sufficient knowledge of basic medical sciences that can be brought to bear on sound clinical reasoning and decision making in the practice of the profession.
- ii. To produce physiotherapists with sufficient skills in the various techniques of physiotherapy to be able to practice efficiently, effectively and safely.
- iii. To produce physiotherapists of international standard, skilled in assessment and treatment of patients as well as in the evaluation of intervention procedures employed in physiotherapy.
- iv. To produce physiotherapists whose confidence in professional practice is hinged on adequate understanding of the theoretical basis of their interventions on patients' conditions and who are poised to employ it to the best advantage of the patient.
- v. To produce physiotherapists that are worthy in character and intellect and are consistent upholders of ethics of physiotherapy practice.
- vi. To produce physiotherapist who have keen interest in knowledge search and are ready to continue equipping themselves intellectually after their training.
- vii. To produce physiotherapists who are humane and ready to show appropriate sympathy and empathy towards the patient and who as well are able to work harmoniously with other members of the medical team.
- viii. To produce physiotherapists who are adept at research design, data treatment and interpretation and who as well are proficient in the dissemination of information or findings there from for the benefit of humanity.

C. ADMISSION REQUIREMENTS

- i. Senior Secondary School certificate with credit passes in 5 subjects including English Language, Mathematics, Chemistry, Physics and Biology with an appropriate pass in the Joint Matriculation Examination.
- ii. Candidates for direct entry must possess G.C.E Advanced level with passes in Biology, Chemistry, and Physics.
- iii. Holders of the Medical Rehabilitation Therapists Board of Nigeria accredited Professional Higher National Diploma for Physiotherapy Technicians (and having a current practice license as Physiotherapy Assistant/Technician) course may also be considered for direct entry admission. **Holders of any other diploma (OND or HND) will not be considered for direct entry admission.**
- iv. After successfully completing a B.Sc. degree course in this or any other University, a candidate may be considered for direct entry admission into the BMR (PT) degree programme of the faculty. Such a candidate shall be expected to satisfy the

admission committee of the Faculty. Such a candidate must have a minimum of second class lower division or be within that range (in case of transfer students.).

- iv. Transfer students from other departments within the University shall be expected to have passed all the courses required for moving from 100 level to 200 level of study of the Bachelor of Medical Rehabilitation programme of this University and must attain a CGPA of at least 4.00. No admission shall be made beyond the 200 level.

D. REGULATIONS GOVERNING THE DEGREE OF BACHELOR OF PHYSIOTHERAPY

The degree of Bachelor of Physiotherapy shall be an unclassified degree, i.e. without classification. Courses shall be studied leading to the award of B.PT Honours degree.

1. THE TRAINING PROGRAMME

The training programme is divided into four phases:

Phase I shall be composed of one-year preliminary studies in the basic sciences.

Phase II shall be composed of three semesters of pre-clinical studies in the basic medical sciences (i.e. two semesters of 200 level and first semester of 300 level of study).

Phase III is the first clinical phase of the programme and shall be composed of three semesters (2nd semester of 300 level to end of 1st semester of 400 level) of departmental courses and clinical exposure at University of Calabar Teaching Hospital and other approved centres.

Phase IV The fourth phase (final phase), which is the second clinical phase, comprising the two semesters of the 500 level of study, shall include also departmental courses and clinical exposure at University of Calabar Teaching Hospital and other approved centres.

2. LENGTH OF PROGRAMME

The Bachelor of Physiotherapy programme shall normally extend over 10 semesters (5 academic sessions) for candidates admitted through 100 level of study and 8 semesters for candidates admitted into the 200 level of study (or through direct entry).

The maximum number of semesters allowed for the degree shall be 15.

A student shall be asked to withdraw from the programme if he/she:

- (i) fails to proceed from the preclinical phase to the 1st clinical phase of the programme after spending extra four (4) semesters;
- (ii) Stays more than an extra 2 semesters beyond the normal period for the clinical phase, except if the student has not spent an extra semester in the pre-clinical phase.
- (iii) Hence a student shall be asked to withdraw from the programme if he/she exceeds or is likely to exceed five (5) extra semesters in excess of the normal period.

3. MODE OF STUDY

All students *must* register full-time. *No part-time registration* is allowed.

E. EXAMINATIONS AND AWARD OF DEGREE

- (i) The *B.PT* degree programme shall run a **MODIFIED COURSE SYSTEM**. The modification requires students to meet certain criteria in order to progress from one phase of the programme to the next. Students who fail to meet the required criteria to progress to the next phase of the programme may be permitted to re-sit the examinations (take second examinations) in the courses, spend extra one or two

semesters at the particular phase of the programme, so as to retake examination in the failed courses or advised to withdraw from the programme. This is to accommodate the clinical nature of the programme, as opposed to other non-clinical programmes run on course credit system.

- (ii) All courses taught during each semester shall be examined at the end of the semester. Student shall be required to take written examination (made up of essay type and multiple choice questions) and/or practical/oral/clinical examination as the case may be.
- (iii) All courses recommended for physiotherapy training in the Department of Bachelor of Physiotherapy are COMPULSORY and MUST be passed.
- (iv) Continuous assessment shall constitute 30% of marks for all courses while examination at the end of the semester in which the course is taken will constitute 70% of the marks. Continuous assessment may include university- wide quizzes, class presentations, term papers and assignments. For the courses involving practical/oral/clinical examination as the case may be, the breakdown shall be as follows:

Continuous Assessment – *Quiz*- 15%

Practical/Oral/ Clinical- 15%

Total= 30%

Examination

-Theory- 35%

Practical/Oral/ Clinical- 35%

Total= 70%

- (v) Pass mark for all courses taken in the Department of Physiotherapy (all of which are core courses) shall be 50%, whilst pass marks for courses taken in other departments shall be as prescribed by the servicing departments. **For courses that have practical/oral/clinical examinations, failure in this aspect implies failure in the course as a whole.**
- (vi) The Faculty Board of Examiners shall approve provisional results. The final year (500-level) results shall be presented along with candidates' cumulative grade point average (CGPA). The computation of CGPA shall be according to the existing guidelines by University of Calabar.
- (vii) In order to proceed from one phase of the programme to the next, students shall have to satisfy the following criteria:
 - (a) ***From first phase (100 level) to pre-clinical phase (1st semester 200 level to end of 1st Semester 300 level):*** Students shall be required to pass all the courses at 100 level. No candidate shall progress from this stage if he/she has failed any course. The afore-going shall also apply to all intending students wishing to transfer from other departments. **All students who transferred into the department must have passed all the prescribed 100 level courses. No waivers shall be permitted.**
 - (b) ***From preclinical phase (1st semester 200 level to end of 1st semester 300 level) to 1st clinical phase (2nd semester 300 level to end of 2nd semester 400 level):*** Students shall be permitted to proceed to 1st clinical phase of study, provided they have passed all the courses at the pre-clinical phase. No student shall be allowed to proceed from this phase if he/she fails ANY course(s).

At the end of the 2nd semester of 200 level the Departmental and Faculty board of Examiners shall consider the results of courses taken during the 1st and 2nd semester. Candidates who fail any of the second semester courses shall have to pass it before proceeding to the clinical phase of the programme while those who may fail the first semester courses shall have not more than the number of units required to make a maximum of 24 units in order to register for the first semester 300 level.

The overall result of the pre-clinical phase of study shall be considered at the end of the 1st semester 300 level (This will include results of courses taken during the 3 semesters constituting the phase). The Departmental Board at this sitting shall determine the suitability of candidates to proceed to the 1st clinical phase of study and recommend same for the approval of the Faculty Board of Examiners.

- (c) *From 1st Clinical phase (beginning of 2nd semester 300level to end of 2nd semester 400 level) to 2nd clinical phase (1st and 2nd semester 500level):* Students shall be permitted to proceed to the final phase of study, provided they have passed all the courses; and shall not have more outstanding units than will allow registration for a maximum of 28 units in the first and second semesters 500 level.
- (viii) A successful student for the award **B.PT** shall have passed all the courses in the clinical phases of study and also have no outstanding GSS course.
 - (ix) All courses in the clinical phases of the programme require that the student **MUST COMPULSORILY** pass **ALL BASIC MEDICAL SCIENCE COURSES** (Anatomy, Biochemistry, Physiology, and other pre-clinical phase courses).
 - (x) The Department shall award a distinction to a student who scores an average of 70% and above in all the parts/aspects of a clinical subject areas, provided that all such courses are passed at first attempt. The subject areas are Electrotherapy (comprising Low and Medium Frequency Stimulating Currents Therapy, Thermotherapy, Sonotherapy and Actinotherapy), Exercise therapy, Kinesiology, Manual therapy, Neurological physiotherapy, Orthopedic and Sports physiotherapy, Paediatrics and Cardio-Pulmonary Physiotherapy.
 - (xi) The list of successful students for the degree shall be published in alphabetical order, indicating those who passed with distinction in any subject.
 - (xii) A student who for no acceptable reason absent himself/herself from any examination which he/she duly registered for shall be deemed to have failed the examination.
 - (xii) Students shall normally be required to register for not less than a prescribed minimum of 15 units and a maximum of 24 units in each semester of each academic year as approved by the Senate of Nnamdi Azikiwe University.
 - (xiii) Students are expected to participate in and **MUST** pass oral/practical examinations for the following courses: (PST362, PST 411, PST 421, PST 431, PST 441, 461, PST 422, 442, 432, PST 511, and PST 512).
 - (xiv) There shall be clinical examinations at the end of 2nd semester 300L, 1st and 2nd semester 400L, and 1st and 2nd semesters 500L (PST 362, PST 511, and PST 512). The clinical examinations shall test the ability of the candidate to assess the patient, plan and carryout appropriate intervention. The clinical examinations shall be in 2 parts:

The scope of the examination shall test the various clinical postings/attachments covered through the duration of training. Continuous assessment for PST 511, and PST 522 shall be computed from the students' clinical posting booklet.

F. SECOND (RE-SIT) EXAMINATIONS

- i. At the end of each semester of the clinical phases i.e. 300 level (2nd semester only), 400 level (1st and 2nd semesters) and 500 level (1st and 2nd semesters), re-sit or second examinations may be conducted at least 6 weeks after the main examination.
- ii. To qualify for second exams, the candidate should not have failed more than 3 courses in 300 level (2nd semester only), and 400 level (1st and 2nd semesters) and not more than 4 courses in 500 level (1st and 2nd semesters).
- iii. Candidates who fail more than the stipulated number of courses in (ii) shall be asked to re-register the courses failed in the following session. Consequently, such a student shall register for the failed courses and take elective courses to make up a minimum 15 credit units per semester in line with the university regulations.
- iv. Elective courses apply to ONLY students who fail to progress to the first clinical phase and who need to make up to minimum 15 credit units per semester.
- v. Students who pass a course at second or re-sit examination shall be credited with whatever scores obtained in the re-sit examination.

G. AWARD OF DEGREE

- (i) In order to qualify for the **B.PT** degree, a student must have satisfactorily completed a minimum of 32 weeks of clinical posting outside the teaching hospital environment.
- (ii) Students are required to complete a minimum of 2000 hours of clinical work before graduation. This is broken down as follows:
 1. 200 hours in 300level
 2. 800 hours in 400level
 3. 1000 hours in 500levelNo student shall be allowed to proceed to the next stage if he/she has not completed the minimum hours of clinical work for the current level.
- (iii) Clinical Vacation Posting I, II, III (i.e. PST 332, PST 481, PST 482 and PST 501) are compulsory and must be attended by students. Failure to attend these postings may result in a student being asked to repeat part or whole of the course if he/she fails to satisfy the requirements at the particular or whole of the Clinical Vacation Posting.
- (iv) The SIWES programme IS COMPULSORY and all conditions in (iii) above shall apply and shall run concurrently with Clinical Vacation Posting I, II, and III (i.e. PST 332, PST 481, PST 482 and PST 501).
- (v) All courses taken at the clinical phases of the programme (i.e. from 2nd semester 300 level to end of 2nd semester 500 level) are professional courses and the subsequent examinations are also professional. Hence, an External Examiner(s) shall moderate all clinical/practical examinations at the end of the corresponding semesters (PST362, PST 411, PST 421, PST 431, PST 441, 461, PST 422, 442, 432, PST 511, and PST 512).
- (vi) At the end of the 2nd clinical phase of the programme i.e. 2nd semester of 500 level an External Examiner(s) shall moderate examinations in clinical and practical courses in addition to project defence (PST 572).
- (vii) The degree shall be awarded provided a student has satisfied the entire course requirements and the professional conduct required for registration with the Medical Rehabilitation Therapists Registration Board of Nigeria (MRTB). Throughout the

course of study, students are required to maintain a conduct embodied in the fundamental principles of Physiotherapy ethics. The department as a guardian of these principles on behalf of the Board (MRTB), therefore reserves the right to refuse recommending through the Faculty to the Senate the award of the degree of Bachelor of Medical Rehabilitation (Physiotherapy) to any student who has successfully fulfilled all academic requirements but whose conduct does not conform to that expected of a prospective physiotherapist.

COURSE OUTLINE**YEAR ONE****FIRST SEMESTER**

COURSE NO	COURSE TITLE	CREDIT UNIT
100 Level		
CHM 111	General Chemistry I	2
PHY 101	General Physics I	2
MTH 111	General Mathematics and Statistics	2
BIO 111	General Biology I	2
GSS 131	History and Philosophy of Science	2
GSS 101	Use of English and Communication Skills I	2
GSS 141	Anti-corruption Studies I	2
BIO 231	General Physiology	2
PHY 141	Geometrical Optics	2
PHY 111	Mechanics, Thermal Physics and Waves	3
		21

100 Level**SECOND SEMESTER**

COURSE NO	COURSE TITLE	CREDIT UNIT
BIO 112	General Biology II	2
PHY 102	General Physics II	2
CHM 102	Organic Chemistry	2
GSS 102	Use of English II (Library Skills)	2
GSS 112	Citizenship Education	2
GSS 122	Philosophy and Logic	2
GSS 142	Anti-Corruption Studies II	2
SOC 102	Introduction to Psychology/Sociology	2
PHY 152	Electricity and magnetism	2
		18

YEAR TWO**FIRST SEMESTER**

COURSE NO	COURSE TITLE	CREDIT UNIT
200 Level		
GSS 211	Introduction to Computers	2
ANA211	Gross Anatomy Upper and Lower Limbs	2
ANA 221	General Histology	2
ANA 231	Embryology and Medical Genetics	2
BCM 211	Physical Biochemistry and Analytical Technique	2
BCM 221	Enzymes and Introduction to Metabolism	2
PHS 211	General Physiology	2
PHS 221	Blood Physiology	2
PHS 231	Cardiovascular Physiology	2
SOC 201	Introduction to sociology	2
		20

200 Level**SECOND SEMESTER**

COURSE NO	COURSE TITLE	CREDIT UNIT
ANA 212	Gross Anatomy of Thorax and abdomen, Pelvis and Perineum	2
ANA 232	Systemic Embryology	2
ANA 222	Systemic Histology	2
BCM 242	Lipid metabolism	2
BCM 262	Metabolism of Proteins	2
BCM 242	Carbohydrate Metabolism	2

PHS 242	Renal Physiology, Body Fluid and Temperature Regulation	2
PHS 252	Respiratory physiology	2
PHS 232	Neurophysiology	2
GSS 212	Computer Applications	2
	Entrepreneurship	2
		22

**YEAR THREE
COURSE NO**

**FIRST SEMESTER
COURSE TITLE**

CREDIT UNIT

PST 311	Electro physics	2
PST 321	Introduction to Physiotherapy and Medical rehabilitation service planning	2
BCM 341	Medical biochemistry	2
ANA 311	Gross Anatomy of Head and Neck	2
NSC 321	Introduction to Nursing sciences	2
RAD 341	Introduction to Radiographic Techniques	2
PHS 341	Endocrinology/ Reproductive physiology	3
PST 371	Introduction to Pathology	2
ANA 322	CNS Histology	2
		19

300 Level

SECOND SEMESTER

COURSE NO

COURSE TITLE

CREDIT UNIT

PST 312	Introduction to Occupational therapy	2
PST 322	Introduction to Speech therapy	2
PST 352	Orthotics and Prosthetics	2
PST 362	Introduction to Clinical	2
PST 342	Kinesiology(Including Pathokinesiology)	4
PHM 322	Introduction to Pharmacology	2
PSY 302	Introduction to Psychology(including abnormal psychology)	3
PST 382	Exercise physiology	2
PST 352	Biomechanics	2
		21

PST 332 Clinical vacation posting 1(including community physiotherapy, Psychiatry and sport) (14 weeks)

YEAR FOUR COURSE NO 400 Level	FIRST SEMESTER COURSE TITLE	CREDIT UNIT
PST 411	Low & Medium Frequency current Therapy (Theory and Practical)	3
PST 421	Actinotherapy and Sonotherapy Therapy (Theory and practicals)	3
PST 431	Thermotherapy(Theory and Practical)	3
PST 441	Manual therapy 1(Massage techniques) (Theory and Practical)	3
PST 451	Exercise Therapy 1 (Theory and Practical)	4
PST 461	Hydrotherapy	3
PST 471	Current and contemporary trends in Physiotherapy	3
		22
PST 481	Clinical Vacation Posting/SIWE II (6weeks)	

SECOND SEMESTER

400 Level COURSE NO	COURSE TITLE	CREDIT UNIT
PST 412	Pain mechanism and management	3
PST 422	Manual therapy II (Theory and Practical)	3
PST 432	Theory and practice of Manipulative therapy	3
PST 442	Exercise Therapy II (Theory and Practice)	3
PST 452	Introduction to Clinical research	3
PST 462	Community Physiotherapy: Occupation and health and safety/ergonomics	3
PST 472	Clinical Administration and Ethics	3
		21

PST482 Clinical Vacation posting/SIWES (Including community physiotherapy,psychiatry,and sports) (14 weeks)

YEAR FIVE COURSE NO 500 Level	FIRST SEMESTER COURSE TITLE	CREDIT UNIT
PST 511	Clinical Posting III	2
PST 521	Seminars	2
PST 531	Orthopaedics/Sports physiotherapy I	2
PST 541	Pediatrics physiotherapy I (Neurological conditions)	2
PST 551	Pediatrics physiotherapy II (Cardio respiratory conditions)	2
PST 561	Pediatrics physiotherapy III (Orthopedics condition)	2
PST 571	Obstetrics &Gynecological Physiotherapy	2
PST 581	General surgery & Intensive Care Physiotherapy	3
PST 591	Neurological Rehabilitation I	3
		20
PST 501	Clinical vacation IV postings/attachment(Specialty Lectures (Anesthesia, Radiology, Psychiatry, Pathology, Occupational Therapy, Speech Medical Social Work and Primary Health Care) (6weeks)	
		20
500 Level COURSE NO	SECOND SEMESTER COURSE TITLE	CREDIT UNIT
PST 512	Clinical Posting IV	3
PST 522	Neurological Rehabilitation II	2
PST 532	Orthopedics/Sports Physiotherapy II	2
PST 542	Neurological Rehabilitation III	2
PST 552	Cardio-respiratory Physiotherapy	3
PST 562	Physiotherapy in General Medical condition	2
PST 572	Project	6
		20

CHM 101—Introductory Chemistry I**2 Units**

This course covers structure of atoms, molecules, chemical equations in calculation, chemical reactions, chemical principles, elements, nomenclature and classes of mass action, reactions, etc. The gas laws, kinetic theory of gases, law of mass action, thermo chemistry, chemical equilibrium, electrolyte and ionic equilibrium, theory of acids, bases and indicators, absorption chromatography etc.

PHY 101-Introductory Physics I**2 Units**

The course covers mechanics, motion, heat, thermodynamics, waves, sound light, electricity and electronics power and energy, charge and capacitance; magnetism and magnetic properties of matter; and elements of circuit electronic and current circuits. Others are the structure of atoms, nucleus, and stability of the nucleus, nuclear fusion, nuclear reaction, refraction mirror, prisms, lenses, electromagnetic spectrum, acoustics, and velocity among others.

MATH 111 — General Mathematics and Statistics**2 Units**

This covers sets, numbers, functions, limits, matrices, logarithms, quadratic equations, binomial theorems, permutations and combinations, probability distributions, curves. It also covers regression analysis test of significance, measures of dispersion and others.

BIO 111 — Introductory Biology I**2 Units**

This is a course on fundamental biology. Contents include origin of life, classification of living things, prokaryotes and eukaryotes, differences and similarities between living and non- living things; Major divisions of the plant kingdom, their features, nutrition, life patterns and reproduction; Elements of ecology, types of habitat; Chromatography etc.

GSS 131-History & Philosophy of Science**2 Units**

The course focuses on man and his environment and incorporates the history and philosophical considerations of scientific and technological development, it covers man, his origin, nature and environment, history of science, nature of scientific enquiry, science and empiricism, deductive and inductive science, logic of scientific and technological development, it covers man, his origin, nature and environment, history of science, nature of scientific enquiry, science and empiricism, deductive and inductive science, logic of scientific discovery, the “new” philosophy of science, science and technology in the society, problems of science, and technology; man and his energy resources-forest products, fossils, solar energy and nuclear energy, environmental pollution-types, consequences, radio activity and toxicology, conservation of the ecosystem.

GSS 101 — Use of English I**2 Units**

The course is aimed at helping students develop the work habits and a range of high level skills required for independent learning and University work. Contents cover skills in reading, listening, note taking, communication, language, organizing study time, examination techniques, comprehension, skimming, and scanning text organization, grammar, spelling and punctuation, sentence elements, and vocabulary development.

The course aims at improving literary research library skills and the art of effective argument. It covers use of library, classification, categories, indexes, bibliographies, structuring the easy, summarizing report writing, academic writing, pronunciation, argument, critical analysis of speech among others.

ZEB 231: Introductory Animal Physiology**2 Units**

Topics treated include external respiration and metabolism in animals; regulation of body temperature and fluids in animals; circulatory systems of animals. Some of these principles are discussed and used to illustrate some physiological processes. Digestion in animals, nervous and reproductive systems.

PHY 141 – Geometrical Optics**2 Units**

Wave fronts and Rays; Huygens' Principle, Reflection at Plane surfaces: Laws of Reflection, Plane mirrors. Perversion, Real and Virtual Images, Images in inclined mirrors. Reflection at curved mirrors: Concave and convex mirror formulae, some methods of determining focal length and radius of curvature of mirrors. Refraction at plane surfaces. Refractive index by apparent depth method. Air cell method of measuring refractive index of liquids. Refractometers, refraction through prisms. The spectrometer. Measurement of minimum deviation. Dispersion and spectra of white light. Achromatic prisms. Kirchhoff's law Refraction through lenses. Thin lenses. Lens equation. Convex lens, concave lens. Focal length values. Lateral magnification. Measurement of focal length of concave and convex lenses. Defects of vision. Defects of lenses. Optical instruments. Visual angle. Simple microscope, telescope, Pinhole Camera. Photometry.

BIO 112 — Introductory Biology II**2 Units**

Contents include characteristics, structure of animal cells, heredity, principles of inheritance and evolution; general characteristics, structure, life patterns of the various phyla of the animal kingdom — amoeba, hydra taenia, ascaris, fish, rabbit, amphibians, etc;

PHY 102 – Introductory Physics II**2 Units**

Electricity and electronics; Power and energy; simple meters; charge and capacitance: Coulomb's law; alternating current circuits. Magnetism and magnetic properties of matter. Elements of circuit electronics. Modern Physics: The structure of the atom; structure of the nucleus; static properties; Binding: Nuclear Fusion; Nuclear fission; Nuclear Reactions: Radiation detectors; Cathode rays.

CHM 122 –Introductory Chemistry**2 Units**

This course covers structure of atoms, molecules, chemical equations in calculation, chemical reactions, chemical principles, periodicity, chemical bonding, chemistry of representative elements, nomenclature and classes of mass action, reactions, etc. the gas laws, kinetic theory of gases, law of mass action, reaction Ratio, thermo chemistry, chemical equilibrium, electrolyte and ionic equilibrium, theory of acids, bases and indicators, absorption chromatography etc.

GSS 102 – Use of English and communication skills II**2 units**

The focus of the second semester Use of English shall be on written work and on reading as required for academic purposes. Attention will also be given to the use of library learnt during the first semester. Students will be guided to select topics from their areas of specialization, structure and present research information in accordance with the specifications of their disciplines.

GSS 112 — Citizenship Education**2 Units**

The course introduces students to the social, cultural, political and economic heritage of the Nigerian nation with emphasis on the people, inter-group relations problems of cultural diversity and nation building, law and language etc. It is aimed at awakening national consciousness among the students.

GSS 122 – Philosophy and Logic**2 Units**

The course covers the nature, values and scope of logic, laws of thought, logical fallacies, sentential logic and truth tables, proofs in predictive logic, rules of inference, conditional proof. Others are nature, value and scope of philosophy, issues in ancient philosophy, medieval philosophy, modern philosophy, and contemporary philosophy.

SOC 102 — Introduction to Psychology**2 Units**

The course exposes students to the meaning of psychology, history and methods of psychology, and cultural background to behaviour. Learning processes: the principles of learning, determinant of behaviour, and personality characteristics. Psychological disorders, conflict and stress; psychology and society, psychology and social issues.

PHY 111 – Mechanics ,Thermal physics and waves**3 Units**

Units and Dimension: Vectors and scalars. Kinematics, Fundamental laws of mechanics, statics and dynamics. Galilean invariance. Universal gravitation; rotational dynamics and angular momentum; conservation laws. Rectilinear motion: Velocity, acceleration, projectiles; motion in a plane; angular velocity, angular acceleration; linear momentum. Vircular motion, Newton's laws of motion. Force; frictional forces; mass. Translational and rotational equilibrium; work energy and power, simple harmonic motion; Atomic theory of matter. Solid state and intermolecular forces. Elasticity: Hooke's law. Young's Shear and Bulk moduli, Elastic deformations. Hydrostatics; Bernoulli and continuity equations; turbulence; Reynolds number, viscosity; Laminar flow; Poiseuille's formula. Surface tension; adhesion, cohesion; capillarity: drops and bubbles; equation of fluid flow, Stoke's law, supersonic flow. Temperature, heat and kinetic theory, the concept of temperature and the kinetic theory of gases. Concept of heat and specific heat capacities. Heat transfer processes. Laws of black body radiation. Pre'vost theory of exchanges. Emissivity. The Green house effect. Green house gases. Thermometry and pyrometry. The foundation of classical thermodynamics: The zeroth law and definition of temperature; the first law, work, heat and internal energy; Carnot cycles and the second law; entropy and irreversibility. Application: qualitative discussion of phase transitions. Molar heat capacities at constant volume and constant pressure. Kinetic theory of gases including Boltzmann constant, Maxwell-boltzmann law of distribution of velocities. Simple applications of the distribution law. Isothermal and adiabatic Expansions. Transport phenomena in fluids. Real gases: Van der Waal's equation.

PHY 152 – Electricity and Magnetism**2 Units**

Electrostatics: Electrical nature of matter, Electrostatic induction.

Action of Points: Van de Graaff generation, Coulomb's law. Charge distribution, electric potential and electric field. Capacitance and capacitors and energy storage. Conductors dielectrics.

Current Electricity: Electricconductors, Resistance, Resistivity, conduction and conductivity. Ohm's Law, simple electric circuits. And electrical measurements. Energy dissipation in circuits Electrolysis.

Magnetism: The magnetic field, magnetic force on moving charges, magnetic force on conductors, moving coil instruments; Galvanometers, ammeters and voltmeters, magnetic field of a current, field lines, Biot-Savart and Ampere's laws. Electromagnetic Induction: Faraday's Law. Lenz's law. DC motors: Ballistic galvanometer and measurement of flux density.

GSS 211 — Introduction to Computers**2 Units**

The course covers definition and types of computer (Micro, Mini, Main Frame, Mechanical, Analog, Digital); parts of computer hardware (Input and output devices, CPU), soft ware (Programmes, compilers, interpreters, utility application packages etc.); keyboard etc Fundamentals of programming are also covered —Algorithm, flowcharting, coding, programming, variables and numerics; transaction of messages (input and output, assignment statements).

ANA 211 — General Anatomy and Gross Anatomy of Upper and Lower Limbs**2 Units**

Introduction, definition of anatomy, sub-division of anatomy, anatomical terminologies, levels of structural organization. The skin and its appendages, the muscles, the circulatory systems, the nervous system, the joints, the skeletal thoracic wall, pectoral Regional and Breast. The Axilla, the arm, the forearm, the wrist and hand. The hip and the thigh. The leg, ankle and foot.

ANA 221 — General History and Histology**2 Units**

Digestive system, Introduction, Definition of histology Histological methods Electron microscopy Histochemistry. Immunocytochemistry, autoradiography, Levels of structural organization, Cells Tissues organs. Cell Structure, General study of primary tissues Epithelia including Blood and Mononuclear phagocyte system. Cartilage and Bone: Muscle tissue and Nervous Tissue, Histology of Digestive system and related oral cavity (Teeth, tongue and salivary glands). Basic structure of the gastrointestinal tract. Oesophagus, stomach, small intestine, large intestine, endocrine cells of the gut. The Liver and extrahepatic biliary apparatus and the pancreas.

ANA 231 — General Embryology, Embryology of Body Cavities and Introductory Medical Genetics**2 Units**

Introduction to the developing human developmental period. Significance of embryology. Descriptive terms in embryology. Gem cell and gametogenesis (Spermatogenesis/Oogenesis). Female reproductive cycles (menstrual and ovarian cycles.) Structure of ovum, ovulation and its role in family planning. Fertilization. Cleavage, formation of the blastocyst. Formation of gem layers, Levels of structural organization, cells Tissues organs. Cell Structure, General study of primary tissues Epithelia including Blood and Mononuclear phagocyte system. Cartilage and Bone: Muscle tissue and nervous Tissue, Histology of Digestive system and related oral cavity (Teeth, tongue and salivary glands). Basic structure of the gastrointestinal tract. Oesophagus, stomach, small intestine. Large intestine, endocrine cells of the gut. The Liver and extrahepatic biliary apparatus and the pancreas. Definition and structure of chromosome, classification of chromosome, and the role of DNA in genetics. Anomalies of autosomal and sex chromosome structures, Mutation Gene and diseases.

BCM 211 — Physical Biochemistry and Analytical Techniques**2 Units**

Gases, solutions, equilibrium and dissociation constants, hydrogen ion concentration and the pH. Methods of expressing concentrations. Bonds and interaction. Introduction to the principles and applications of some commonly used Biochemical Techniques (Colorimeter, chromatography, electrophoresis, Centrifugation, spectrophotometry, spectroscopy and manometry).

BCM 221- Chemistry of Biologically Important Compounds**2 Units**

Chemistry and classification of lipids properties and structures. Fats, fatty and acids, Waxes, sterol, phospholipids, glycosphingosides, sulfolipids, protein chains (Primary, secondary, Tertiary and quaternary structures.) Colour reactions of proteins and amino acids. Chemistry and properties of nucleic adds structures. Types and functions of the RNAS. Genome organization. Nucleoprotein. Vitamins and Co-enzymes. Plant growth factors. Nature of

enzymes, classification, inhibition, activation, control of activity. Enzyme specificity, active sites, mechanism of action.

PHS 211 — Introductory Physiology

2 Units

Introduction to physiology and its place in medicine. The composite cell, cell membrane and transport mechanism, membrane potentials. Physiology of excitable tissues. Types of ionic channels. Cells signaling introduction to patch clamp technique.

PHS 221 — Blood Physiology

2 Units

General characteristics and function of blood. Properties and functions of plasma. Red Blood cells; factors involved in erythropoiesis. Blood groups. White blood cell; origin, types, properties, functions, antigenicity and immunities platelets and haemostatic mechanism. Reticulo-endothelium system. Clotting and fibrinolytic system.

PHS 231 — Cardiovascular System

2 Units

Overall plan and functions of the cardiovascular system. Physiological anatomy of the heart, mechanical events of cardiac cycle, cardiac output and its estimation. Electrocardiogram. The vascular system; gross sectional area of different vascular groups, systolic diastolic pulse and mean arterial pressures, exchange of fluids across the capillaries, venous and central venous pressure. Integration of cardiovascular functions, central control centers, regulation of systemic blood pressure. Cardiovascular adaptations in health and disease. Circulation through special areas.

ANA 212 - Gross Anatomy of Thorax, Abdomen, Pelvis and Perineum 2 Units

The thoracic cage, intercostal spaces, the mediastinum, the lung and pleura, the heart and pericardium. Thoracic, diaphragm, abdominal wall muscles. Formation of Rectus sheath, the peritoneum. Abdominal Viscera: Liver and gall bladder, stomach, intestines, spleen, kidneys and suprarenal glands, pancreas; and their blood supply, autonomic control and applied anatomy. The Bony pelvis, pelvic peritoneum, pelvic viscera: rectum, muscles and fascia. Urogenital triangle. Superficial and deep spaces of the perineum.

**ANA 222 — Histology of Cardiovascular System Immune System
and Urogenital System, Skin and its Appendages**

2 Units

Histology of arteries, arterioles, veins, venules, capillaries, sinusoids, heart lymphatic vessels, lymph nodes, spleen and thymus, kidney, ureters, urinary bladder and urethra. Gonads (ovary and testis) and accessory urogenital organs (epididymis vas deferens, seminal vesicles, prostate gland, penis and clitoris). Skin and its appendages (Hairs, sebaceous glands, nails, sweat glands).

**ANA 232 – Embryology of the Cardiovascular, Respiratory and
Digestive systems**

2 Units

Early development of cardiovascular system. Development of Heart and blood vessels. Anomalies of Heart and great vessels. Aortic arch derivatives and anomalies. Foetal circulation. Development of lymphatic system. Development of the Diaphragm and anomalies. Development of the digestive system; foregut, midgut, hindgut; and anomalies. Organs: Liver, Gall bladder, spleen and pancreas. Rotation of the gut and developmental anomalies of the GIT.

**ANA 242 – Neuroanatomy of the Spinal Cord, Brain Stem, Tracts
of the Spinal Cord and Brain Stem**

2 Units

Introduction to Neuroanatomy and general plan of the nervous system. The structure of the neuron. Synapses, peripheral nerves, degeneration and regeneration of neurons. Neuroglia.

Gross and microscopic anatomy of the spinal cord. Tracts of the spinal and brainstem, ascending and descending. Pathways connecting the spinal cord to the cerebral cortex. Sections of the brainstem at different levels. Applied anatomy of the different parts of the brainstem and spinal cord.

BCM 242 - Chemistry and Metabolism of Lipids, Sterols and Biological Pigment

2 Units

Chemistry and classification of lipids, Properties and structures of Fatty: fatty acids waxes, sterols, phospholipids, glycosphingosides, sulfolipids and steroids. Digestion and absorption of lipids. Blood lipids (including lipoproteins). Synthesis and degradation of fatty acids (including α -oxidation of fatty acids). Fatty acids, interconversions, Prostaglandins.

BCM 252 — Chemistry and Metabolism of proteins and Amino acids 2 Units

General properties of proteins, classification of proteins and amino acids, properties of amino acids. Synthesis of peptides. Methods for separating and determinations of amino acids and peptides. Amino acids sequence and organization of protein chains (primary, secondary, tertiary and quaternary structures). Colour reactions of proteins and amino acids. Metabolism of individual amino acid. One-carbon unit. Protein synthesis (including the involvement of the RNAs). Urea cycle. Disorders of protein and amino acids metabolism.

PHS 242 — Renal Physiology, Body Fluids and Temperature Regulation 2 Units

The skin function anatomy, temperature regulation, abnormalities of temperature regulation Metabolism: factors regulating Metabolism: factors regulating metabolism. Conditions for measuring basal metabolic rate. Compartmentalization and composition of body fluid, Physiologic anatomy of the kidney, renal circulation and auto regulation. Glomerular Filtration, tabular Transport urine formation. Counter-current system. Water volume and ionic regulation. Acid base balance. Micturition. Abnormalities of renal function.

PHS 252 – Respiratory System

2 Units

Physiologic anatomy of respiratory apparatus, brief review of relevant gas laws, lung volumes, mechanics of breathing, gas diffusion through alveoli capillary membrane, pulmonary circulation, ventilation perfusion ratio oxygen and carbon dioxide transport, control of respiration, hypoxias, oxygen treatment, abnormal types of breathing, altitude and depth, acclimatization. Respiratory adjustments in health and disease

PHS 232 – Neurophysiology

2 Units

Development and general plan of the central nervous system. Classification of receptors. Properties of receptors. Physiological classification of nerve fibres. Dual system for transmission of somatosensory sensation. Coding for characteristics of a stimulus. Somatosensory cortex. Pain-special sense organs. Ear (hearing). Vestibular Apparatus and Equilibrium. Taste, smell. The eye, spectrum of movements. Motor system hierarchy. Motor function of the spinal cord and lower brain stem. Monosynaptic reflexes, bisynaptic reflexes, polysynaptic reflexes. The effects of surgical removal of the higher nervous centers. Electrophysiological study of the cord reflexes. Basic characteristics of the sympathetic and parasympathetic division

Sociology (Soc 201):

Elements of sociology with basic methodology, and introduction to social anthropology; comparative study of human societies and cultures; Particular emphasis on institutional arrangements such as economy, politics, family, religion, education, and health systems. Socio-cultural change processes and the rise of radical perspectives relevant to our contemporary situations

2 units

GSS 212 - Computer Application**2 Units**

Safety precautions in computer laboratories. Identification of Hardware components: Keyboard, mouse, CPU, monitor and printers. Support electronic peripherals: UPS, voltage stabilizers, etc. booting up the system cold boot and warm boot. Windows startup environment-start button, the pull down

PHY 242 Waves and Sounds**2 Units**

As described by the department

ANA 311 – Gross Anatomy of Head and Neck**2 Units**

The skull and cervical vertebrae. The scalp, the face (superficial and deep structure), the cranial cavity; the brain and meninges, cerebral dura and its reflexions. The dural venous sinuses and their applied anatomy. Pituitary gland. Cranial nerves. The orbit, the eyeball, extraocular and intraocular muscles, lacrimal gland. Parasympathetic ganglia, otic, pterygopalatine, submandibular and ciliary ganglia. The Nose, nasal cavity, paranasal air sinuses. The oral cavity: mouth, teeth, tongue, hard and soft palate and palatine tonsils. Salivary glands: parotid, submandibular and sublingual glands. The Ear: external ear middle ear and inner ear, vestibulocochlear nerve. Fascial planes and compartment of the neck. Triangles of the neck. Muscles of the neck. Neck viscera: thyroid gland and parathyroid glands, larynx and trachea, pharynx and Oesophagus. Blood vessels and lymphatics of the head and neck. Cervical plexuses and cervical sympathetic ganglia and applied anatomy

PHS 341 – Endocrinology/Reproductive Physiology

Functions and control of the secretions of the thyroid gland, parathyroid gland, pancreas, pituitary and adrenal glands. Abnormalities of endocrine function; normal integration in the control of calcium and glucose metabolism. The kidney as an endocrine gland.

Gametogenesis and fertilization; structures of ectodermal, mesodermal, and endodermal origins and embryogenesis of different organs. Medical genetics. Sex hormones. Oestrous and menstrual cycles. Physiology of pregnancy, parturition and lactation. Foetal and neo-natal circulation and respiration. **3 units**

BCM 341-Medical Biochemistry

Neurochemistry: morphology of neurons, nervous tissue, lipids and proteins. Biochemistry of nerve transmission and potential. A brief outline of mechanism of action of some neurotoxic compounds. Schizophrenia/Parkinson's disease. Metabolic antagonism in neurochemistry.

Biochemistry of muscle: biochemistry of muscle contraction. Morphology of skeletal smooth and cardiac muscles. Role of sarcoplasmic reticulum and calcium in muscle contraction and relaxation. Metabolic fuels of muscle, muscular dystrophies and myopathies.

Immunochemistry: structural features and mechanism of action of antibodies. Complement proteins and function of the different immune responses. Immunological reactions in diabetes.

Bile and bile pigments. Biosynthesis, occurrence in nature and metabolism of porphyrins. Haem synthesis and degradation to include formation and function of bile acids and salts. HIV/AIDS.

2 units**Electrophysics (PHY 322)**

Coulomb's Law. Electric field Intensity and charge distribution in conductors and insulators of various configurations. Electrostatics. Electric potential, potential gradient and the electrical potential energy. Concept of electromagnetic induction. Electrical hazards and prevention. Gauss law, electrostatic potential, Laplace's equation, point charges, continuous charge distribution and dipoles, capacitors and

dielectrics, Nernst-Planck equation and membrane potentials. Debye-Huckel theory of electrolytes. Solubility and electrophoresis of proteins, quasistatic flow of charge, distribution of potential in volume conductors. Applications of electrocardiography. Magnetic fields and magnetic forces of/on current-carrying conductors. The laws of Biot and Savart. Magnetic properties of matter. Faraday's laws of induction

3 units

Introduction to Physiotherapy And Medical Rehabilitation Service Planning (PST 321)

Definition, philosophy and scope of physiotherapy. Historical development –abroad and in Nigeria. Ethical principles and professional conduct in physiotherapy practice. Role of physiotherapy in preventive, promotive, curative and rehabilitative care. Physiotherapy professional bodies –WCPT, NSP, NAPS, APTA, CSP, CPA, e.t.c. Licensing bodies – MRTB (Nigeria) HPC (U.K.), Canadian Alliance (Canada) etc. Health planning policy. Concepts of total health care delivery system. Concept of Rehabilitation. Role sharing and the therapist's role in the system. Introduction to the methods and modalities used in physiotherapy and medical Rehabilitation

2 units

Introduction to Nursing (NSC 321)

The role of nursing and relationship to medical rehabilitation. Emphasis on fundamental procedures in general nursing –bed making, patient lifting, monitoring of vital signs, skin care, and bed sore prevention, as well as wound dressing, first aid, use of suction machine and intensive care.

2 units

Introduction to Radiographic Techniques (RAD 341)

OBJECTIVE: To make the Physiotherapy student conversant with basic radiographic technique-projects, views and how they are obtained.

Principles of image formation, Factors influencing Image quality, Radiation protection in clinical setting, appropriate technique presentation format, identification and presentation of patient for radiographic examiners. Basic radiographic projections of upper extremities; lower extremities. Basic radiographic technique of chest, abdomen, pelvic region; vertebral column. Basic radiographic technique for skull, Skeletal Accident and Emergency Radiography.

2 units

Biomechanics (PHY 352)

Basic mechanical concepts: classification, composition and resolution of force systems; moments; concurrent and general force system; torque; elementary kinematics and vector algebra; Newton's laws of motion; elasticity and strength of materials; momentum conservation; conservation of energy; mechanics of muscular and joint actions; conservation of energy; first law of thermodynamics; application to metabolism and work done by various organs of the body. Angular momentum and torque. Harmonic motion and diffusion. Applications to osmotic pressure and passage of substances through capillary walls. Molecular motion in gases: distribution functions and the Boltzmann's principles. Intermolecular collisions and transport processes. Equilibrium in external fields; the centrifuge and measurement of molecular weight. Simple machines in the musculoskeletal system.

3 units

Introduction to Occupational Therapy (PST 312)

Introduction to theory and practice of occupational therapy in psychiatry, Neurology, Geriatrics and Paediatrics. Therapeutic occupation in relation to adaptive equipment and techniques, functional evaluation techniques and reporting in occupational performance, Orthotics and environmental adaptations.

2units

Introduction to Speech Therapy (PST 322)

Anatomy and physiology of speech and hearing mechanism, factors influencing speech development. An introduction to normal human communication. Survey of speech pathology and audiology. Applied phonetics. Articulation disorders language disorders in Children. Aphasia and associated disorders. Emotional problem of the speech handicapped.

2 units

Prosthetics and Orthotics (PST 352)

Examination of various orthotic devices, and their uses. A study of various appliances in: bandage, splint and plaster works, upper and lower limb prosthesis and orthoses, neck and body supports, aids to daily living. Biochemical basis and principles of prescription of prosthesis. Principles of prosthetics designs with particular reference to upper and lower limb amputation. Care, uses and prescription of wheelchairs and other assistive devices for activities of daily living e.g. crutches, walking frames, canes, etc

2units

Exercise Physiology (PST 382)

Review of food substrates and final common pathway of metabolism, Energy systems of the body, body system responses to acute exercise, physiological adjustments or adaptations of body systems to chronic exercise in health and disease; Methods and prescription of exercise, training programme; body composition – assessment, anthropometry, somatotyping; body adiposity indices; weight control programme, physical fitness in health and disease. Indications and contraindications of exercise.

3 units

Kinesiology (PST 342)

- (1) A study of biochemical principles as related to human motion. Relationship of anatomic structure to function. Muscular analysis of common movements in daily activities. Principles of motion and force as they apply to the body in action and in equilibrium. Range of motion and causes of limitation. Goniometry. Muscles as force generators of movement; Muscle proteins; muscle fibre types; sarcoplasmic reticulum; isotonic and isometric contractions; force-Velocity relationship of striated muscles; rheological models of muscle, bone and synovial fluid; movement as alteration in joint position; relationship between movement and posture; neural control of movement and posture; neuromuscular transmission; motor end-plate; electromyography (EMG) as an extracellular method of studying the role of the CNS in movement. Motion analysis. Gait analysis.
- (2) Pathokinesiology. Posture. Principles, classifications, and applications of motor skills. Identification and analysis of normal and abnormal postures, and movement. Corrective therapy for abnormal human motions and postures. Individual and group/class exercise therapy.

4 units

Introduction to General Pathology (PST 372)

Pathology of diseases; Cellular basis of diseases; inflammation and healing; immune mechanisms, physical agents in injury and disease (drug, chemical, radiation injury), atrophy, hypertrophy, degeneration, oedema, thrombosis, infarction, Bacterial and viral diseases, fungal infections, metaplasia, neoplasia and tumors, inherited diseases.

2 units

Introduction to Pharmacology (PHM 322)

Basic principles of drug action, current major therapeutic drugs and their action on cells, tissues and the various organ systems, fate of drugs, site of action, mechanisms of drug action and toxicity, steroidal and non-steroidal anti-inflammatory drugs; analgesic drugs including local anaesthetic agents antimicrobial agents including anti-tuberculosis drugs, antihypertensive drugs.

2 units

Introduction to Psychology (PSY 302)

Emphasis to be placed on the common types, causes, diagnostic characteristics, and treatment of mental disorders observable in the Nigerian and other cultures-minor and serious types. An introductory survey of the topics, theories, and research results of contemporary psychology. Human behaviour An introductory survey of the topics, theories, and research results of contemporary psychology. Human behaviour in health and disability; conditioning and learning, development of intelligence and awareness, emotion, motivation and interpersonal interaction in relation to rehabilitation in health and disability; conditioning and learning, development of intelligence and awareness, emotion, motivation and interpersonal interaction in relation to rehabilitation. **3 units**

400 and 500 levels:

(PRE-REQUISITE FOR ALL COURSES IN THE 4TH AND 5TH YEARS OF STUDY: STUDENTS MUST HAVE COMPULSORILY PASSED ALL THE COURSES AT THE PRE-CLINICAL PHASE ESPECIALLY ANATOMY, BIOCHEMISTRY AND PHYSIOLOGY)

YEARS 4 and 5 shall consist of professional and clinical subjects made up of:

LOW & MEDIUM FREQUENCY STIMULATING CURRENTS (PST 411)

Direct/galvanic current and therapeutic applications (iontophoresis-including treatment of hyperhidrosis). Low frequency currents- faradic type, interrupted direct and sinusoidal currents (principles, methods of applications, physiological effects, therapeutic uses, indications, contraindications, dangers of, precautionary measures). Electro-diagnosis (strength-duration curves, nerve conduction test, EMG). Physiology of pain, pain modulation, pain gate theory. Electroanalgesia using different forms of TENS. Moderate frequency currents (DDT, interferential currents, Russian currents, high voltage pulsed galvanic currents).

3 units

MANUAL THERAPY I: MASSAGE TECHNIQUES (PST 441)

History and developments in definitions of manual therapy (massage). Preparation for massage. Classifications and individual techniques. Techniques of applications of massage (including physiological changes, approaching procedure, indications, precautions and contraindications). Techniques for various body regions and specific cases like scars, e.t.c. Bandaging: types and techniques. Traction –types, indications, techniques. Acupressure (including physiological changes, approaching procedure, indications, precautions and contraindications), and Myofascial Release (including

physiological changes, approaching procedure, indications, precautions and contraindications).

3 units

EXERCISE THERAPY I (PST 451)

Classification of movement. Fundamental and derived starting positions. Relaxed and passive movements. Free and resisted active movements. Types of resistance used for treatment. Motion. Muscle strength assessment, grading of muscle strength, muscle strengthening. Classifications, applications, techniques and effects of therapeutic exercises. Muscle strengthening-types, prescription, progression, indications in health and disease for strength development in health and disease. Techniques for major muscles in the body. Role of motor unit in muscle strengthening. Indications for strength development in health and disease. Ranges of motion and basis of progression. Joint mobilization- types, prescription, progression, indications and contraindications. Modalities for joint mobilization and basis of choice. Techniques for all major joints.

4 units

HYDROTHERAPY (PST 461)

Historical background. Hydrodynamics-Archimedes' law, Pascal's law, surface tension, etc. body immersion and weightlessness. Therapeutic pools (types), whirlpools and baths. Pool accessories. Therapeutic pool environment-pool temperature, pH, humidity, ventilation, water hygiene (disinfectant). Hydrology. Theory of treatments by hydrotherapy. Principles, methods, effects, physiological and therapeutic effects of hydrotherapy. Indications and contraindications. Equipment and Accessories.. Hydrotherapy in some specific conditions: dangers, precaution, and contraindications. Care and maintenance of pool. Techniques of exercise in water. Exercises in water versus exercises on land.

3 units

CURRENT/CONTEMPORARY TRENDS IN PHYSIOTHERAPY (PST 471)

New developments in the treatment of medical and surgical conditions by physiotherapy. HIV/AIDS, Primary Health care; Evidence –based practice; NHIS; Ethical issues; Terminal care; Public and Private sector involvement in health services, cancers, Euthanasia, Health care for selected groups –women, children, elderly; international health definitions and classifications. Definition of health measurement. Physiotherapy measurements and clinical decision-making. Outcome measures. Clinical measuring instruments–validity, reliability and utility. Measurement of specific variables–vital signs, pain, disability, functional performance, anthropometry, physical fitness (stress test), lung function tests, motor function tests.

2 units

SONOTHERAPY AND ACTINOTHERAPY (PST 421)

Physical principles and procedures governing the use of ultrasound ultraviolet rays. Production and use. Physiological effects and therapeutic uses, indications and contraindications, dangers and precautionary safety measures, positioning and operation of machines. Treatment records. Merits of each modality. Nanotherapy.

3 units

THERMOTHERAPY (PST 431)

Physiology of cold and heat. The physical principles, applications, methods/procedures, physiological effects, therapeutic effects, indications and contraindications, dangers and safety measures heat, such as hydrocollator, paraffin bath, infrared irradiation. Biophysics, physiological and therapeutic effects of shortwave diathermy, microwave diathermy. Selection of each modality. Methods of application, indications, contraindications, dangers and precautions and maintenance of equipment. Cryotherapy-historical development, principles of chemical preparations for cold therapy and endothermic reactions methods of application, indications, contraindications, dangers and precautions. Laser - biophysics, physiological and therapeutic effects, indications, contraindications, and precautions.

3 units

PAIN MECHANISMS AND MANAGEMENT (PST 412)

Part I: Definition of pain and terminologies; classification of pain (musculoskeletal, spinal, radicular, referred, central, cancer etc); Anatomy and physiology of pain (pain pathways – ascending & descending); Mechanisms and pharmacology of pain transmission and pain modulation (including Pain Gate Theory); Psychosocial and cultural aspects of pain; Description and selection of appropriate pain measuring tools for children and adults; General principles of pain management; Multidisciplinary approach to pain management; Drug management of pain (Anti-pyretic analgesics [Non-steroidals, acetaminophen & phenazones derivatives], opioids, anti-depressants & anti-convulsants); Physiotherapy modalities used in pain management (electrotherapy, manual therapy, exercise therapy & patient education, e.g. back school); Criteria for selection, indications and contra-indications for single or multiple physiotherapy modalities and limitations of physiotherapy modalities; Other approaches to pain management (acupuncture, nerve blocks, surgical, spiritual etc); Ethical standards in pain management.

Part II: Posting (15 hours) in a pain clinic or a relevant clinic.

3 units

MANUAL THERAPY II (PST 422)

Bandaging- types and techniques. Transfers and lifting techniques; positioning. Acupressure (including physiological changes, approaching procedure, indications, precautions and contraindications), and Myofascial Release (including physiological changes, approaching procedure, indications, precautions and contraindications).

3 units

THEORY AND PRACTICE OF MANIPULATIVE THERAPY (PST 432)

Manipulative therapy. Spinal manipulation and peripheral manipulation. Surface and radiological anatomy. History of joint manipulative techniques for joint and soft tissues. Physiological effects. Passive and forced means of joint manipulations. Prolonged stretching of tissues to correct deformity. Introduction to the techniques of the various schools of thought in spinal manipulation e.g. Cyriax, Maitland, Nwuga, Kaltenborn, etc.

Peripheral manipulation. Theory and practice in manipulation about evaluation, application techniques, selection and treatment plan in different joints of musculoskeletal patients.

2 units

EXERCISE THERAPY II (PST 442)

Traction –types, indications, techniques. Remedial exercise. Suspension Therapy. Relaxation techniques. Use of medicine ball, wobble boards, Tilt tables. Flexibility

and stretching exercises. Coordination exercises. Therapeutic exercise in some common conditions (e.g. LMNL, amputees, arthritis, back pain, pulmonary diseases, hemiplegia and paraplegia). Breathing exercises. Principles of exercise prescription. Part:

4 units

INTRODUCTION TO CLINICAL RESEARCH (PST 452)

Research in physiotherapy. Research problems, Literature review, and Research design. Sampling methods. Variables, Data collection, storage analysis and presentation. Referencing. Manuscript preparation for dissertation and journal publication; simple statistics in research. Central role of statistics in medicine. Variables, routine and special data collection. Reduction, Summarization and presentation of data. Probability, normal distribution, sampling methods, tests of hypothesis. Measurements of health.

3 units

HYDROTHERAPY (PST 451)

Historical background. Hydrodynamics-Archimedes' law, Pascal's law, surface tension, etc. body immersion and weightlessness. Therapeutic pools (types), whirlpools and baths. Pool accessories. Therapeutic pool environment-pool temperature, pH, humidity, ventilation, water hygiene (disinfectant). Hydrology. Theory of treatments by hydrotherapy. Principles, methods, effects, physiological and therapeutic effects of hydrotherapy. Indications and contraindications. Equipment and Accessories.. Hydrotherapy in some specific conditions: dangers, precaution, and contraindications. Care and maintenance of pool. Techniques of exercise in water. Exercises in water versus exercises on land.

3 units

COMMUNITY –BASED PHYSIOTHERAPY AND ERGONOMICS (PST 462)

Organization and management of physiotherapy clinics in a rural setting. Concept of community based rehabilitation and the role of the physiotherapist in community health. Concepts of health and policy planning for community. Roles of physiotherapy in community. Community mobilization. Assessment of community, health status and risk factors in communities, workplaces and schools. Planning for health promotion, illness prevention treatment and rehabilitation in community. Itinerant and domiciliary services. Primary health care. Ergonomics and workstation design. Definition of work environment. Open and loose systems. Human characteristics and work task. Accidents and safety in industry, the home and transportation. Existing legislation, causes of accidents and prevention, heat stress and heat stroke. Assessment of physical, psychosocial and chemical abuses in industries. Principles of health education.

(Students to embark on visit to some industries and appraise the work stations)

3units

CLINICAL ADMINISTRATION AND ETHICS (PST 472)

Planning of a new physiotherapy department. Personnel/ management financial management. Elementary principles and practice of accounting communication and motivation. Professional code of ethics. Physiotherapy practice in Nigeria. Principles of management, organisation, organograms, structure of physiotherapy practice.

2units

CLINICAL POSTINGS II (PST 511)

Introduction to ward and out-patient routine and administration. Interaction with direct patient-care related departments of the hospital. Clinical teachings, ward rounds and out-patient clinic under the supervision of clinicians and physiotherapy lecturers. Students to spend 15 weeks in four clinical rotations of: surgery (including orthopaedics), medicine, O&G and Paediatrics.

3 units

PAEDIATRICS PHYSIOTHERAPY I- NEUROLOGICAL CONDITIONS (PST 541)

Review of the basic motor development of children and the development in other aspects: proprioception, perception and oro-motor facial function. Normal development from fetus to young child. Maturation of brain after birth. Sequence of motor development. Motor control theories. Reflexes and reflex testing.

Physiotherapy assessment in different neurological pediatric problems: Physiotherapy in developmental delayed, cerebral palsy, lower motor neurone lesion, spina bifida. Management of children with neonatal neurological conditions. Physiotherapy in various treatment approaches. Clinical reasoning in pediatrics. Principles of neurodevelopmental therapy (NDT). Other infant motor disorders-Down's syndrome, mental retardation, autism,

2 units

SEMINARS (PST 521)

Class discussions and oral presentation based on course work, clinical and vacation postings and presentation of project proposals.

2units

ORTHOPAEDICS/SPORTS PHYSIOTHERAPY I (PST 531)

Principles and practice of physiotherapy and outcome measures in orthopaedic. An introduction of physical therapy to the orthopaedic conditions. Non traumatic Orthopedic conditions in the extremities including the shoulder, the elbow, the forearm, the wrist, the hand, the hip, the thigh, the knee, the leg, the ankle and the foot regions and in the spine, including general spinal conditions, condition specific to the cervical, the thoracic and the lumbar regions. Soft tissue disorders. Principle and management of skeletal muscles and adjoining soft tissue. Infection of muscle. Muscular dystrophies. Low back pain syndrome. Other orthopaedic conditions of interest to physiotherapy.

3units

PAEDIATRICS PHYSIOTHERAPY II- ORTHOPAEDIC CONDITIONS (PST 551)

Physiotherapy assessment in different orthopaedic conditions. Management of children with orthopaedic and musculoskeletal problems (congenital and acquired). Physiotherapy in various treatment approaches in conditions such as CTEV, arthrogryposis multiplex congenital, osteogenesis imperfecta, e.t.c. Other paediatric disabling conditions. Clinical reasoning in paediatrics.

2 units

PAEDIATRICS PHYSIOTHERAPY III- CARDIORESPIRATORY CONDITIONS (PST 561)

Physiotherapy assessment in different pediatric cardiorespiratory and respiratory conditions. Management of children with cardiopulmonary problems. Physiotherapy in various treatment approaches. Clinical reasoning in pediatrics.

2 units

PHYSIOTHERAPY IN OBSTETRICS AND GYNAECOLOGY (PST 571)

Obstetrics: A study of pregnancy, mechanism of normal and abnormal labour and disease of obstetric conditions. Structure, functions and injuries of the pelvic floor. Ante-natal care and the role of physiotherapy. Physiological and metabolic changes and complications in pregnancy. Pre and post labor exercises. Electro-analgesia during labour. Parturition, caesarian section, weak abdominal and pelvic floor muscles. Role of physiotherapy.

Gynaecology; Pelvic inflammatory disease, incontinence, vesico-vaginal fistula, pelvic floor repair, retroverted and prolapsed uterus. Problem of menstruation, menopause, human sexuality. Obstetric and Gynaecological surgery. Role of physiotherapy.

2 units

PHYSIOTHERAPY IN GENERAL SURGERY AND INTENSIVE CARE (PST 581)

Principles and practice of physiotherapy in Intensive care; intensive care physiotherapy, care of the unconscious and critically ill patient. Pre- and post-operative complications and care. General principles of intensive care. Anaesthesia and the respiratory, circulatory and musculoskeletal systems. Pre- and post-operative physiotherapy and post-operative complications due to anaesthesia. Burns-definition, classification, management, post burn complications. Intensive care of the burnt patient. Wounds, ulcers, decubitus ulcers. Healing of wounds. General surgical procedures. Types of incisions. Basics of Otorhinolaryngology.

Anatomy and physiology of the skin. Specific skin conditions-acne vulgaris, boils, whitlows, carbuncles, psoriasis, alopecia areata and totalis, vitiligo, eczema, leprosy, infections in wounds (tetanus), skin grafts, flaps, varicosities, burulli ulcers.

2 units

NEUROLOGICAL REHABILITATION I (PST 591)

Neurophysiological principles-review of the physiology of the CNS. Principles of neurological assessments and investigations. Basic knowledge of neurological diagnosis and analysis of neurological disorders. Lesions within the skull-cerebrovascular disease and hemiplegia, Parkinson's disease head injuries and space-occupying lesions (brain and spinal cord tumor). Lesions within the spinal column-paraplegia, quadriplegia, tabes dorsalis, disseminated sclerosis, polyneuritis and peripheral neuropathy, syringomyelia, poliomyelitis, myasthenia gravis, Gullian-Barre syndrome, etc. medical and physiotherapy management of conditions. Treatment protocols, outcome measures. Principles of reading and interpreting neuroimage and special investigation. Neural plasticity and recovery after injury. Motor control and learning theory.

3 units

CLINICAL POSTING IV (PST 512)

Supervised clinical participation in physiotherapy in Orthopaedics/Rheumatology, Neurology/Neurosurgery, General Surgery and Paediatrics. Rotation through the consultant clinics, and ward rounds for 8 weeks.

Theatre postings, I.C.U./Anaesthesia, Radiology, Obstetrics and Gynaecology. Rotation through the consultant clinics, and ward rounds for 8 week.

Clinical teachings ward rounds and out-patient clinic under the supervision of clinicians and physiotherapy lecturers. Students to spend 15 weeks in four clinical rotations of: surgery (including orthopaedics), medicine, O&G and Paediatrics.

3 units

NEUROLOGICAL REHABILITATION II (PST 522)

Neurophysiological principles-review of the physiology of the PNS. Principles of neurological assessments and investigations of peripheral nervous system. Treatment protocols, outcome measures. Principles of reading and interpreting neuroimage and special investigation. Pathology of cerebellum, peripheral nerves, motor neuron diseases, neuromuscular junction diseases, diseases of muscle, infection of the nervous system, vestibular system disorders. Principles of physical therapy assessment and treatment. Implementation of clinical reasoning into physical therapy assessment and treatment processes.

Outcomes measure in neurological rehabilitation.

3 units

ORTHOPAEDICS/SPORTS PHYSIOTHERAPY II (PST 532)

Principles and practice of physiotherapy and outcome measures in traumatic orthopaedic conditions. A study of physical therapy assessments, principles of management, methods of treatment in fracture, dislocations, soft tissue injury and, amputation. Traumatic Orthopaedic conditions in the spine, traumatic spinal injury, spinal surgery essential to physiotherapy.

Sports medicine: causes and management of sports injuries; the role of the physiotherapist in sport medicine. Sports injury (classification and prevention).

First aid for common conditions. Strapping. Stimulants, doping and nutrition in sports. Physiotherapy intervention in sports. First aid.

2 units

NEUROLOGICAL REHABILITATION III (PST 542)

Pathology of cerebellum, peripheral nerves, motor neuron diseases, neuromuscular junction diseases, diseases of muscle, infection of the nervous system, vestibular system disorders. Principles of physical therapy assessment and treatment. Implementation of clinical reasoning into physical therapy assessment and treatment processes.

Outcomes measure in neurological rehabilitation.

3 units

CARDIO-RESPIRATORY PHYSIOTHERAPY (PST 552)

Clinical and radiological anatomy and physiology of the respiratory and cardiovascular systems. Clinical cardiopulmonary pathology. Blood gases and acid/base balance. Mechanical ventilation. Aerosol and humidity therapy. Gas therapy, respiratory therapy. Management of ventilatory failure. Resuscitation. Specific respiratory and cardiovascular disorders, path physiology and methods of physiotherapy management. Principles of cardiac rehabilitation and cardiac massage. The equipment used in the treatment and a practical resuscitation program. The significant process in medical treatment applicable to physical therapy treatment,

equipment used in the physical therapy management and cardiac rehabilitation program.

Cardiology (cardiac rehabilitation).

3units

PROJECT WORK (PST 562)

Each student identifies through independent study a topic of department interest, carries out a research and makes a write –up that has to be defended. Each student shall be assigned to a project supervisor who shall be a physiotherapist and an academic member of staff.

The project can only be carried out upon successfully presenting and defending a proposal at a departmental seminar designated for this purpose

6 units

PHYSIOTHERAPY IN GENERAL MEDICAL CONDITIONS (PST 572)

Physiotherapy in psychiatry; nutritional/metabolic disorders: e.g. diabetes mellitus; and other medical conditions-sickle cell disease, cystic fibrosis, arteriosclerosis, arteriosclerosis, aneurysms, Buerger’s disease, Raynaud’s disease, phlebitis, thrombosis, embolism, and oedema.

Gerontology: theories of aging. Methods of evaluation and management of disorders common in the elderly. Demographics and sociology of aging, geriatric medicine and gerontology, policy of care and social welfare. Physiological changes, common diseases and disorders in the elderly including mobility problems. Roles of physical therapy in health promotion, illness prevention, treatment and rehabilitation for elderly. Multidisciplinary approach in geriatric care.

3 units

CLINICAL VACATION POSTINGS I, II AND III

This consists of PST 332, PST 481, 482 and PST 501. Students are expected to undergo attachment to sports centres/clubs, psychiatric hospital, community/rural clinic, private physiotherapy clinic, rehabilitation homes, leprosy centres, orthopedic hospital etc. for the period of vacations. i.e. end of 2nd semester 3rd year end 1st Semester 5th year.

Assessment for this course shall comprise: attendance at the postings, scores obtainable in the posting booklet, number of hours spent in the postings and reports/seminars written and presented by the student at the end of each posting.

Students are expected to have completed a minimum of 30 weeks. A student may be asked to repeat a part or whole of the course if he/she fails to satisfy any of the requirements.

Total of 32 weeks

