
MADONNA UNIVERSITY, NIGERIA



FACULTY OF MEDICINE

Student's Handbook

REVISED ACADEMIC CURRICULUM FOR MBBS PROGRAMME
(2016/2017)

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1. INTRODUCTION

The Faculty of Medicine was established in October 2001 with three departments; Anatomy, Medical Biochemistry and Physiology, two years after the University was given a certificate of registration as a private University in the Federal Republic of Nigeria. The Faculty was set up to train undergraduate medical students in pre-clinical, and prepare them for their future training in clinical medicine. The foundation Dean of the Faculty was late Doctor Mbanwusi M.C, a senior consultant of Surgery. The Faculty started with 17 medical students. In 2003 the Faculty of Basic Medical Sciences was created. The new Faculty took over the three Departments and the training of pre-clinical students. Also, in the same year the first Provost of the college of Medicine and Health Sciences was appointed in the person of Prof Ibeh C.I. After his tenure as the Dean of the Faculty of Medicine, the pioneer Dean was succeeded by Dr. P.J.C. Nwosu in 2005. Prof A.E. Anya took over as Dean in June 2009 before handing over to the current Dean Professor C.T. John in June 2014 at the end of his tenure.

The Faculty since its inception, has witnessed steady increase in staff, facilities, student's enrolment and graduate output. The faculty graduated its first batch of graduates in 2009. Staff of the Faculty have been very regular and consistent in their participation at national and international conferences. Governance of our Faculty adopts an integrated approach in which each member of staff is assigned to a duty as a coordinator or officer. Main duties in the several Departments making up the Faculty are carried out by these coordinators/officers. These officers in turn report to the respective Head of Departments who supervises their duties. Head of Departments in turn then update the Dean. Regular Faculty board meetings are held during which issues affecting or likely to affect the wellbeing of staff and students as well as the teaching of the courses and discharge of duties are raised, deliberated, debated and finally resolved in a cordial way that enhances the sustainability of our role as staff and relationship with students and the University administration.

1.1 Philosophy, Objectives of the Programme

The education and training of MBBS candidates in the Faculty is attuned to the basic health needs of the society. This commitment is reflected in a competency-directed and community-oriented approach with emphasis on social responsiveness and relevance, and life-long learning.

Deriving from the broad philosophy of the Faculty, the following objectives are pursued:

- a.* To provide students with a broad and balanced foundation of sound scientific, professional platform for the production of medical doctors who would be capable of working anywhere in Nigeria and be acceptable by the international community;

- b.* to provide such training as would equip these future health personnel to render care at Primary Health Care (PHC) level;
- c.* to develop in students the ability to apply knowledge and skills to solving theoretical and practical issues and satisfy internationally recognized standards, and undertake postgraduate training towards specialization within and outside the country; and
- d.* to train medical doctors with sufficient management ability to play a leadership role in health care delivery and develop a range of transferable skills that are of value in Medical practice.

1.2 Faculty of Medicine Curriculum

The curriculum of the Faculty of Medicine aims at educating and training of competent medical doctors and other health personnel for the promotion of good health and eradication of diseases. It is also designed to promote integration of modern scientific ideas in medicine and to develop research capability. In addition, the programme emphasizes the inter-relationships of various clinical disciplines and their synthesis into a unified code for the solution of problems.

1.3. Programme Leading to MBBS

The Faculty of Medicine offers courses leading to the degree of Bachelor of Medicine and Bachelor of Surgery (MBBS). The curriculum normally spans six academic years and is divided into three stages. They are

- (i) The pre-medical stage which is essentially natural and pure science based
- (ii) The pre-clinical stage in which the basic medical science courses are taught
- (iii) The clinical stage in which the courses focus on the nature of diseases with the systematic instructions in medicine

First Year:

Pre-medical Course: This consists of natural science subjects of Botany, Zoology, Chemistry, Physics, Mathematics and Computer Sciences. General Studies courses, morals and philosophy are also taught.

Second and Third Year

Pre-clinical courses: These comprise basic medical sciences of Anatomy, Medical Biochemistry, Community Health and Medical Physiology. The course contents of these subjects include practical works and lectures. The student consequently acquires sufficient skill and capability to perform tests and analysis on tissues and fluids. The student must take all the courses and pass them to proceed to the next stage of clinical medicine.

Clinical Courses: The courses span the fourth, fifth and sixth years of the medical programme during which instructions are given in Medicine, Surgery, Pathology, Medical Microbiology, Haematology and Immunology, Pharmacology, Community

Health, Anaesthesia, Radiology, Epidemiology, Paediatrics, Obstetrics & Gynaecology.

The training involves health care and full time clinical attachment in the wards and includes didactic lectures, and seminars. At the end of each posting there is always continuous assessment which forms 30% of the entire mark of each final examination.

1.4 Admission Requirements

(i) **UME Entry Requirements:** Students applying to be admitted into the six years programme for the award of Bachelor of Medicine and Bachelor of Surgery (MBBS) in Madonna University Nigeria, must satisfy the minimum University Matriculation Requirements. Such students must have at least five credit (5) passes in biology, chemistry, mathematics, physics, and English language in the West African School Certificate or its equivalent (GCE, SSCE, NECO), in not more than two sittings. However, the University reserves the right to further screen the students for admission by oral interview or aptitude test.

(ii) **Direct Entry Requirements:** In addition to requirements in the above, candidates who possess any of the following qualifications can be considered for admission.

- a. At least three advanced Level passes in the General Certificate of Education (GCE) The subjects should include Physics, Chemistry and Biology/Zoology.
- b. Candidates who possess the basic admission requirements as stated above in 1.4.(i) and possess a first degree of at least a second class lower division from recognized Institutions in the medical, para-medical, biological sciences.

1.5 Minimum Duration

The programme shall have duration of six (6) years of which the first three (3) sessions shall be spent in for the mandatory acquisition and passing of the Basic Medical Sciences courses.

1.6 Graduation Requirements

To graduate from the MBBS degree programme, a student must pass all prescribed examination.

1.7 Job Opportunity

Successful graduates of MBBS degree programme are well equipped (after housemanship) for careers in hospitals, private practice, teaching, research activities in Universities or research institutions and even in administrations, Graduates of the MBBS degree programme are also equipped for post graduate training anywhere in the world.

1. 8 Departments Involved in the Training of MBBS Candidates

Fifteen (15) Departments are involved in the training of MBBS candidates:

a) Faculty of Basic Medical Sciences of the College of Medicine.

1. Department of Anatomy
2. Department of Physiology
3. Department of Medical Biochemistry

b) Faculty of Medicine

4. Department of Anatomical Pathology
5. Department of Chemical Pathology
6. Department of Haematology/Immunology
7. Department of Medical Microbiology
8. Department of Obstetrics & Gynaecology
9. Department of Paediatrics
10. Department of Pharmacology & Therapeutics
11. Department of Community Medicine & Primary Health Care
12. Department of Internal Medicine
13. Department of Psychiatry
14. Department of Surgery
15. Department of Radiography

1.9 Personnel Administration

Personnel administration is headed by the Dean of the Faculty. Decisions are made at the Faculty Board in collegiate manner. Administrative activities are run by Faculty Officer who functions under the direction of Dean. Major policy decisions are taken by the Faculty Board comprising the Dean, the Provost and all academic staff.

1.10 Definition of Terms

General Study Courses: A course which every student in the University must compulsorily take and pass at foundation level. They are not directly related to any programme, but are necessary in the holistic formation of students before graduation.

Core/Compulsory Course: A course which must be registered for and passed by a student to obtain the degree in Biochemistry.

Required ancillary Course: A course that a student takes at a level of study and must be passed before graduation.

Elective Course: A course that students take within or outside the faculty. Students shall choose an elective course from among three others in order to make up the required additional units for the award of the degree. Students may graduate without passing the course provided the minimum credit unit for the course had been attained.

Pre-requisite Course: A course which student must take before the course for which it is a prerequisite can be taken. Courses can only be designated prerequisite to other courses at a higher level. A prerequisite may be waived for a suitably qualified candidate by the Department.

Credit Load per Semester: The Minimum credit load per semester is 15 units while the maximum is 24 units.

Course Unit: A series of approximately 15 one-hour lectures, or tutorials or 15 x 3-hour laboratory or field practical classes, or an equivalent amount of assigned study, or any combination of the above.

Course Credit Unit System: This should be understood to mean a 'quantitative system of organization of the curriculum in which subject areas are broken down into unit courses which are examinable and for which students earn credit(s) if passed'. The courses are arranged in progressive order of difficulty or in levels of academic progress, e.g. Level or year 1 courses are 111, 112 etc. and Level II or Year II courses are 211, 212 etc. The second aspect of the system is that courses are assigned weights allied Credit Units.

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

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

1.11 General Studies (GST)

Goal

The goal of GST courses is to produce a well-rounded, morally and intellectually capable graduate with vision and entrepreneurial skills in an environment of peace and social cohesiveness.

Objectives: The objectives of the General Studies programme consist of the following:

- (a) Acquisition, development and inculcation of the proper value-orientation for the survival of the individual and society.
- (b) The development of intellectual capacities of individuals to understand, appreciate and promote peaceful co-existence.
- (c) Production of graduates with broad knowledge of individual of Nigerian Nationals and people with a view to inculcating in them mutual understanding and patriotism.
- (d) Exposing graduates of Nigerian Universities to the rudiments of ICT for computer literacy and ability to live usefully in this ICT age.
- (e) Preparing students for a post university life with opportunities for job creation and entrepreneurial skills.
- (f) Production of graduate capable of communicating effectively (both oral and written).

1.12 Course Coding

A course is coded by a combination of three letters and three digits. The three letters code stands for the Department offering the course. Biochemistry courses are coded as BCH for example. For the three digits numbers, the first digits indicates the year of study, the second indicates the subject stress area while the third digit shows the semester. First semester are represented with odd numbers while second semesters are represented with even numbers.

General Studies Courses	(GST)
Biology	(BIO)
Chemistry	(CHM)
Physics	(PHY)
Mathematics	(MTH)
Computer Science	(CSC)
Anatomy	(ANT)
Biochemistry	(BCH)
Physiology	(PIO)
Community Medicine	(COM)
Medicine	(MED)

Obstetrics and Gynaecology	(OBG)
Paediatrics	(PAE)
Surgery	(SUG)
Pathological Sciences	(PAT)
Pharmacology /therapeutic	(PHA)
Chemical Pathology	(CPY)
Haematology	(HEM)

1.13 Admission and Withdrawal from Courses

(a) Admission into courses closes at the end of the third full week of each semester. Students who fail to register as stated shall be considered for late registration. Any student who fails to register within the first two weeks after late registration has commenced shall be advised to defer the semester. Only in special circumstances and through the approval of the Vice Chancellor on behalf of the Senate, may a student be allowed to register thereafter. An application for late registration shall normally attract a prescribed fee.

(b) A student can withdraw from a course without penalty any time up to and including the seventh week of the semester. Any student who withdraws after the seventh week will be deemed to have failed except in special cases approved by Senate.

(c) The minimum load permissible per semester is 15 units while the maximum load is 24 units. However, a final year student who requires less than 15 units of courses in either semester to complete graduation requirements will be allowed to register for the outstanding courses only. Students who wish to register above 24 units must seek the approval of the University Senate through the Vice Chancellor and through the Dean of the Faculty

2. COURSE EVALUATION

2.1 Continuous Assessment

The progress of the students enrolled in each course is continuously assessed by means of tests; written assignments, reports and/or such other means as may be consistent with the objectives and conduct of the course as determined by the Department.

2.2 Examinations:

Departments in the Faculty conduct the examinations of the 2nd MBBS to 5th MBBS. To qualify to sit for the examination, students must have completed their lectures, practicals and clinicals with a minimum of 75% mandatory attendances. The continuous assessments constitute 30% of the final score in the professional degree

examination. Students do end of posting test after each of the clinical postings. The end of clinical posting tests is compiled together to form the continuous assessment. Each professional examination has a written paper I (Essay), paper II (MCQ) and an oral part. In addition, the 4th and 5th MBBS professional examinations have clinical parts. The Head of the department is the Chief Examiner. He is in-charge of selecting the examination questions from the submissions made by the lecturers in the department. Provisional examination results are released within 48 hours of completing the examination.

2.3 Absenteeism

Notices for tests and professional Examinations shall be duly put up at least two weeks to the date fixed for such test/exam. All students who therefore absent themselves from any of such tests/exams will not have another opportunity to re-take. Those with medical reports duly certified by MAUTH could however have their cases reviewed by the Department or Faculty and each case shall be treated according to its own peculiarity and merit for a reprieve which will not include a re-take option. In summary, make-up (re-take) tests/exams are not possible in the Faculty for ALL categories of students. Cases of absenteeism from comprehensive examination or Part I MBBS examination are the concern of the Faculty or College.

2.4 Grading of Student Scripts

Results of all examinations, or tests taken shall be released with the total obtainable marks specified to enable students know their relative standing per time. In most cases, marks allotted each question shall be indicated against each question on the question paper to enable the candidate select (or plan for) which approach or combination will be more rewarding. Most multiple-choice questions (MCQs) are graded with a penalty factor of "one-half" which means that half of the total number of failed answers will be deducted from the total number of correct answers. This is adopted to discourage guessing and encourage honesty and precision whereby students answer only those MCQs which they are sure of their correctness.

Essay, Practical and Oral questions will however not be graded with any penalty. The total of all Continuous Assessment Test scores shall be compressed to make up 25% while attendance at lectures and practical classes shall carry a complementary mark of 5% to make up the 30% mark required for continuous assessment. The final examinations (Professional MBBS Exams) will be based on 70% as earlier indicated. A minimum pass mark of 50% in all professional examinations has been adopted. In addition to continuous assessment tests, examinations should be administered at the end of each course.

2.6 Final Marks

Each course shall be graded out of a maximum of 100 marks and the score for each course shall be assigned appropriate letter grades and grade points as follows:

Mark	Letter Grade	Grade Point
70 – 100	A	5.0
60 – 69	B	4.0
50 – 59	C	3.0
45 – 49	D	2.0
01 – 44	F	0.0

2.7 Probation: Probation is a status granted to a student whose academic performance falls below an acceptable standard. A student whose Cumulative Grade Point Average is below 1.50 at the end of a particular year of study, earns a period of probation for one academic session.

2.8 Withdrawals: A candidate whose performance in the Faculty is very poor at the end of a particular period of probation should be required to withdraw from the University. However, in order to minimize waste of human resources, consideration is given to withdrawal from programme of study and possible transfer to other programmes within the University.

2.9 Repeating Failed Course Unit(s) (Carry Over)

Subject to the conditions for withdrawal and probation, student may be allowed to repeat the failed course unit(s) at the next available opportunity, provided that the total number of credit units carried during that semester does not exceed 24, and the Grade Points earned at all attempts shall count towards the CGPA.

2.10 External Examiner System

Usually four External Examiners are invited to participate in the conduct of any professional degree examination. The External Examiners also evaluate the questions of the written part. Students' scripts are usually marked by two (2) separate examiners and the results are collated. Each student passes through at least six (6) different examiners in the clinical part of the examination which has three (3) sections. External Examiners certify the overall performance of the candidates as well as the quality of available facilities and teaching.

SIX YEAR DEGREE PROGRAMME IN MBBS

YEAR ONE: FIRST SEMESTER

S/N	Course Code	Course Title	Units
<i>Required Ancillary Courses</i>			
1	BIO 101	General Biology I	2
2	CHM 101	General Chemistry I	2
3	CHM 171	Basic Practical Chemistry I	1
4	MTH 101	General Mathematics I	3
5	PHY 101	General Physics I	2
6	PHY 105	General Physics Laboratory I	1
7	BIO 131	Introduction to Genetics	2
<i>General Studies Courses</i>			
8	GST 111	Communication in English I	2
9	GST 113	Nigerian People and Culture	2
10	GST 125	Intro to Entrepreneurial Studies I	2
11	GST 123	Communication in French	2
12	GST 121	Use of Library, Study Skill and Information Technology	2
Total			23

YEAR ONE: SECOND SEMESTER

S/N	Course Code	Course Title	Units
<i>Required Ancillary Courses</i>			
1	BIO 102	General Biology II	2
2	BIO 172	General Biology Practical	1
3	CHM 102	General Chemistry II	2
4	CHM 172	Basic Practical Chemistry II	1
5	CSC 104	Introduction to Computer Science	2
6	MTH 102	General Mathematics II	3
7	PHY 102	General Physics II	2
8	PHY 106	Basic Physics Laboratory II	1
9	PSY 111	Introduction to Medical Psychology	2
<i>General Studies</i>			
9	GST 122	Communication in English II	2
10	GST 112	Logic, Philosophy and Human Existence	2
11	GST 162	Introduction to Social Science	2
12	GST 142	Communication in German	1
13	GST 102	Fundamental Philosophy	1
Total			24

YEAR TWO: FIRST SEMESTER

S/N	Course Code	Course Title	Units
<i>Core Courses</i>			
1	ANT 211	Intro. to Anatomy, Gross Anatomy of Upper & Lower Limbs	3
2	ANT 221	Histology of Basic Tissues	2
3	ANT 231	General Embryology	2
4	BCH 207	Introduction to Medical Biochemistry	2
5	BCH 261	General Biochemistry Practical I	1
6	PIO 201	Introductory Physiology and Haematology	3
7	PIO 223	Cardiovascular Physiology	2
8	COM 211	Introduction to Medical Statistics	1
9	CSC 324	Computer Application	
<i>General Studies</i>			
10	GST 215	Introduction to Entrepreneurial Studies II	2
11	GST 211	Fundamental Theology	1
Total			21

YEAR TWO: SECOND SEMESTER

S/N	Course Code	Course Title	Units
<i>Core Courses</i>			
1	ANT 212	Gross Anatomy of Thorax, Abdomen, Pelvis & Perineum	3
2	ANT 222	Systemic Histology I	2
3	ANT 232	Systemic Embryology	2
4	ANT 242	Neuroanatomy I	2
5	BCH 204	Metabolism of Biological Molecules & Bioenergetics	3
6	BCH 234	Nutrition and Nutritional Biochemistry	2
7	PIO 264	Renal Physiology, body fluids & Temperature Regulation	2
8	PIO 232	Neurophysiology I	2
9	PIO 212	Respiratory Physiology	2
<i>General Studies</i>			
10	GST 222	Studies in Peace & Conflict Resolution	2
Total			21

YEAR THREE: FIRST SEMESTER

S/N	Course Code	Course Title	Units
<i>Core Courses</i>			
1	ANT 311	Gross Anatomy of Head and Neck	3
2	ANT 321	Systemic Histology II	1
3	ANT 341	Neuroanatomy II	2
4	BCH 317	Chemistry and Metabolism of Proteins & Nucleic Acids	2
5	BCH 301	Special Topics in Medical Biochemistry	3
6	PIO 341	Gastrointestinal Physiology	2
7	PIO 355	Endocrinology and Reproduction	2
8	PIO 333	Neurophysiology II	2
9	COM 311	Human ecology and Medical Sociology	1
10	COM 312	Health statistics and demography	1
11	COM 313	Research methods in public health	1
Total			20

YEAR THREE: SECOND SEMESTER

S/N	Course Code	Course Title	Units
<i>Core Courses</i>			
1	MED 412	Introduction to Clinical Medicine	2
2	MED 420	M ₁ S ₁ Posting	1
3	MED 421	Cardiology I	2
4	MED 423	Neurology I	1
5	MED 425	Respiratory Medicine I	1
6	MED 427	Nephrology I	1
7	COM 311	Human ecology I / Medical Sociology	1
8	COM 312	Health Statistics and Demography	1
9	COM 313	Research methods in Public Health field	2
10	MCB 361	Bacteriology	2
11	MCB362	Virology	1
12	MCB 363	Mycology	1
13	HEM 361	Basic Immunology	2
14	PAT 361	General Pathology I	2
15	PHA 371	General Pharmacology	2
16	PHA 372	Systemic Pharmacology	2
Total			24

YEAR FOUR: FIRST SEMESTER

S/N	Course Code	Course Title	Units
Core Courses			
1	MED 420	M ₂ M ₂ Posting	2
2	PHA 461	Nutrition	1
3	COM 413	Reproductive/Family Health	2
4	COM 414	Public Health Nutrition	1
5	MCB 464	Infectious Diseases	2
6	MED 422	Cardiology II	1
7	MED 424	Neurology II	1
8	MED 426	Respiratory Medicine II	1
9	MED 428	Nephrology II	1
10	MED 429	Tropical Medicine I	1
11	SUG 451	Principles of Surgery	4
12	SUG 456	Junior Surgery Posting	
13	PHA 471	Anti-Microbial, Antifungal, Antiprotozoal Agents	2
14	PHA 473	Anti-Neoplastic Agents	1
15	PHA 475	Drugs Acting in CNS & Antipsychotic Drugs	
16	CPY 461	Human Nutrition	1
17	CPY 466	Chemical Pathology Practical & Lab. Analysis	1
Total			24

YEAR FOUR: SECOND SEMESTER

S/N	Course Code	Course Title	Units
Core Courses			
1	PHA 476	Special topics	2
2	MCB 467	Medical Protozoology I	1
3	MCB 462	Practical Protozoology I	1
4	MCB 468	Practical Medical Microbiology	1
5	CPY 464	Clinical Chemistry	2
6	HEM 460	General Haematology & Blood Transfusion	2
7	HEM 468	Practical Haematology	1
8	PAT 462	Systemic Pathology	2
9	PAT 466	Histopathology	2
10	PAT 468	Forensic Medicine	1
11	MCB 462	Medical Helminthology	2
12	MCB 466	Applied Medical Microbiology	1
13	MCB 468	Medical Entomology	2
14	SUG 452	Gastroenterology & Endocrinology	2
15	SUG 454	Basic Surgical Skills	2
Total			24

YEAR FIVE: FIRST SEMESTER

S/N	Course Code	Course Title	Units
Core Courses			
1	COM 511	Epidemiology/Principles and methods	2
2	OBG 531	Anatomy and Physiology of female reproductive system	3
3	COM 513	Occupational Health	1
4	OBG 533	Obstetrics clinics	3
5	OBG 535	Pregnancy, labour and puerperium	2
6	COM 514	Health service, Management & Administration	1
7	COM 516	Introduction to Medical statistics	1
8	COM 515	Internal Health	1
9	COM 517	Human Ecology/Medical sociology	1
10	COM 519	Health Statistic and Demography	1
11	OBG 537	Special Gynecology & Obstetrics clinics	2
12	PAE 543	Nutrition, Growth and Development	2
13	PAE 545	Child Health and Primary care	2
14	PAE 547	Prenatology, Neonatology and Genetics	2
15	PAE 549	Junior Posting	
Total			24

YEAR FIVE: SECOND SEMESTER

S/N	Course Code	Course Title	Units
Core Courses			
1	OBG 539	Special Topics in Obstetric and Gyneacology	3
2	SUG 551	Urological Surgery	3
3	SUG 553	Further Surgical Skills	3
4	COM 516	Research Methods in Public Health	1
5	COM 517	Epidemiology of Communicable & Non-Communicable Diseases	3
6	SUG 552	Traumatology	1
7	SUG 554	Intermediate Surgery	1
8	PAE 544A	Nephrology/Paediatric Gastroenterology	1
9	PAE 546	Endocrine and Metabolic Disease of Children	1
10	PAE 548	Neurology/Disease of Muscles and Bone	1
11	PAE 540	Paediatric Haematology/Oncology	1
12	PAE 542 ^A	Paediatric Respiratory Medicine/Paediatric Cardiology	1
13	PAE 544 ^B	Senior Posting	1
14	PAE 500	Disease of the Blood	1
15	PAE 501	Diseases of the Digestive & Genito Urinary Systems	1
16	PAE 541	Cardiovascular Respiratory	1
17	PAE 542 ^B	Paediatric Infections, Diseases and Genetics	1
Total			24

YEAR SIX: FIRST SEMESTER

S/N	Course Code	Course Title	Units
Core Courses			
1	COM 611	Computer in Medicine	2
2	COM 612	Primary Health Care	3
3	MED 621	Tropical Medicine II	1
4	MED 623	Gastroenterology I	1
5	MED 625	Psychiatry	1
6	MED 627	Dermatology	1
7	MED 629	Radiology	1
8	MED 620 ^A	M ₃ S ₃ posting (5 weeks)	2
9	SUG 651	Clinical Anaesthesiology	2
10	SUG 653	Otorhinolaryngology (ENT)	2
11	SUG 655	Ophthalmology	1
12	SUG 657	Minor Surgical Specialties (Senior Surgery (S ₃) posting)	2
Total			19

YEAR SIX: SECOND SEMESTER

S/N	Course Code	Course Title	Units
Core Courses			
1	COM 618	Community Health and Primary Healthcare posting (Rural & Urban)	2
2	COM 619	General Medical Practice	1
3	COM 620	Environmental Sanitation and Locally Endemic Diseases	2
4	MED 622	Gastroenterology II	1
5	MED 624	Endocrinology	1
	MED 626	Dermatology	1
6	MED 628	Tropical Medicine II	1
7	MED 620 ^B	M ₄ S ₄ postings	
8	SUG 652	Orthopaedic Surgery	2
9	SUG 654	Thoracic Surgery/Vascular Surgery	2
10	SUG 656	Plastic and Reconstructive Surgery	2
11	SUG 658	Neurosurgery	2
12	SUG 650	Postings (Major Surgical Specialties (8 weeks)	2
13	COM	Project	3
Total			22

3. SYNOPSES OF COURSES

NON-PROFESSIONAL COURSES

GST 125: Introduction to Entrepreneurial Skills I

Introduction to entrepreneurship and new venture creation; entrepreneurship in theory and practice. The opportunity, forms of business, staffing, marketing and the new venture; Determining capital requirements, raising capitals, financial planning and management; starting a new business feasibility studies, innovation; legal issues; insurance and environmental considerations.

GST 111: Communication in English I

Effective communication and writing in English language skills. Writing of essay, letters, speeches, public announcements, minutes of meetings and term papers. Reading and listening comprehension. Construction of Sentences, outlines and paragraphs. Collection and organization of materials and logical presentation/punctuation.

GST 113: Nigerian People and Culture

Study of Nigerian history, culture and arts in pre-colonial times. Nigerian's perception of his world. Nigerian cultures and their characteristics. Evolution of Nigeria and their characteristics. Evolution of Nigeria political system, Indigene/ settler phenomenon. Concepts of trade, Economic self-reliance, Social justice, Individual and national Development, Norms and values, Negative attitudes and conducts (cultism and related vices), Re-orientation of moral and national values, Moral obligations of citizens and Environmental problems.

GST 121: Use of Library, Study Skills and Info, Comm. Tech. (ICT)

Brief history of libraries, library and education, university libraries and other types of libraries, study skills (reference services). Types of library materials, using library resources including e-learning, e-materials etc. understanding library catalogues (CARD OPAC etc.) and classification, copyright and its implications, Database resources, Bibliographic citations and referencing. Development of modern ICT, hardware technology, software technology, input devices, storage devices, output devices, word processing skills (typing, etc.).

GST 123: Communication in French

Introduction to French, alphabets and numeracy for effective communication (written and oral) conjugation and simple sentence construction based on communication approach, sentence construction, comprehension and reading of simple text.

GST 112: Logic, Philosophy and Human Existence

A brief survey of the main branches of philosophy, logic special symbols in symbolic logic conjunctions, negation, affirmation, disjunction, equivalent and conditional statement laws of torts. The method of deduction using rules of inference and bi-conditionals qualification theory. Types of discourse, Nature of arguments, validity and soundness, Distinction between deductive and inductive inferences. Etc. illustration will be taken from familiar texts including literature materials, Novels, law reports and newspaper publications.

GST 122: Communication in English II

Logical presentation of papers, phonetics, instruction of lexis, Arts of public speaking and oral communication, figures of speech, precise report writing.

BIO 101: General Biology I

Cell structures and organization; Plant and animal cells, Function of cellular organelles; diversity and characteristics of living things. General reproduction; mitosis, meiosis, abnormalities associated with gene crossing, heredity and evolution. Concept of ecology and types of habitats diversity of plants and animals. Food chains and food webs; interrelationship of organisms. Types of population dynamics, static, climax communities, types and factors affecting them. *Edaphic factors, rainfall, wind, relative humidity, light intensity etc. *Modification of the natural ecosystem. Elementary biochemistry of carbohydrates, protein, lipid and nucleic acids.

CHM 101: General Chemistry 1

Atomic Structure and periodic table. Development of Configuration of Elements. Stoichiometry and mole concept. Electronic theory of atoms and valency. Chemical bonding. Formula and IUPAC basic nomenclature of compounds, Properties of gases; Equilibria and Thermodynamics; Chemical Kinetics; Electrochemistry. Radioactivity and its application. Phase equilibrium, study of one and two components systems.

CHM 102: General Chemistry II

Historical survey of the development and importance of Organic Chemistry; Nomenclature and classes of organic compounds; Homologous series; Functional groups; Isolation and Purification of organic compounds; Qualitative and quantitative organic chemistry; Stereochemistry; Determination of structure of organic compounds; Electronic theory in organic chemistry; Saturated hydrocarbons; Unsaturated hydrocarbons. Periodic table and Periodic Properties; Valence Forces; Structure of solids. The Chemistry of selected metals and non-metals. Qualitative analysis. Structure of solids. Kinetic theory of gases and gas laws. Colligative properties of dilute solutions. Raoult's law, Henry's law and molecular weight determination. Thermochemistry and Hess's law. Chemical equilibrium. Law of mass action, reaction rate and chemical energetics. Electrochemistry, Ionic equilibria. Theory of acids, bases and indicators.

CHM 171: Basic Practical Chemistry I

The theory and practice of simple volumetric and qualitative analysis. Simple organic preparations, reaction of functional groups and physical determinations.

CHM 172: General Practical Chemistry II

More on theory and practice of simple volumetric and qualitative analysis. Simple organic preparations, reaction of functional groups and physical determinations.

PHY 101: General Physics I

(Mechanics, Thermal Physics and Waves) Space and Time, Units and dimension, Kinematics; Fundamental Laws of Mechanics, statics and dynamics; work and energy; Conservation laws. Elasticity; Hooke's law, Young's shear and bulk moduli, Hydrostatics; Pressure; buoyance, Archimedes' Principles., Surface tension; adhesion, cohesion, capillarity, drops and bubbles. Temperature; heat; gas laws; laws of thermodynamics; kinetic theory of gases. Sound, Applications. Measurements, Units and Dimensions. Linear motion. Relevance of linear kinematics to science and physiological effects of accelerations. Motion in a circle and simple harmonic motion. Gravitation, statics and hydrostatics, elasticity, friction, viscosity and surface tension. Heat, temperature, thermometers. Expansion of solids, liquids and gases. Gas exchanges in terrestrial organism. Heat transfer, change of state. Heat regulation in animals, low temperature in biology and in medicine. Waves and resonance ultra sound and its application. Practicals: General measurements and error analysis, simple experiments in mechanics and properties of matter. Heat and thermodynamics. Kinetic model of gas, A model for solid. Properties of metals

PHY 105/PHY 106: General Physics Laboratory I & II

This laboratory based course emphasize quantitative measurement, the treatment of measurement and graphical analysis. A variety of experimental techniques will be employed. The experiments include studies of matters, the oscilloscope, mechanical systems, electrical and mechanical resonant systems, light, heat, viscosity, etc. covered in PHY 101 & PHY 102

MTH 101: General Mathematics I

(Algebra and Trigonometry) Real number system: simple definitions of integrals, rational and irrational numbers. The principle of mathematical induction. Real sequences and series: elementary notion of convergence of geometry, arithmetic and other simple series. Theory of quadratic equations. Simple inequalities: absolute values and the triangle inequality. Identities, partial fraction. Sets and subsets: union, intersection, compliments. Properties of some binary operations of sets: distributive, closure, associative, commutative laws with examples. Relations in a set: equivalence relation. Properties of set functions and inverse set functions. Permutations and combinations. Binomial theorems of any index. Circular measures, trigonometric

function of angles of any magnitudes. Addition and factor formulae. Complex numbers: algebra of complex numbers, the Argand diagram, De Moivre's theorem, n-th root of unity.

MTH 102: Elementary Mathematics II

(Vectors, geometry and dynamics) Types of vectors: points line and relative vectors. Geometrical representation of vectors in 1-3 dimensions. Addition of vectors and multiplication by a scalar. Components of vectors in 1-3 dimensions: direction cosines. Linear independence of vectors. Point of division of a line. Scalar and vector product of two vectors. Simple application. 2-dimensional coordinate geometry: straight lines. Angle between two lines. Distance between points. Equations of circle. Tangent and normal to a circle; Properties of parabola, ellipses, hyperbola, straight lines and planes in spaces; direction cosines; angle between lines; and between lines and planes; distance of a point from a plane; distance between two skew lines.

CSC 104: Introduction to Computer Science

History of Computer Science and their generations; Computer Hardware; functional components Modern I/O units. The meaning of a computer origin, classification: Analog, Digital and Hybrid. Types of Digital computers: mainframe, mini and microcomputer models of digital computers, modes of computer operations. The generation of computer types, the meaning of a programme and a "job". The two levels of computer software: The high-level and low-level. The computer and the language levels. Examples of systems software, Interpreters, compilers, and translators. The function of system software; the functional units of a digital computer; Examples of application software packages. Data processing and data processing centers. Criteria for using a computer. Type of computer users' interface. The types of printers. Introduction of the internet.

BIO 102: General Biology II

Levels of organization. Origin and History of classification. Principles of Binomial nomenclature. Hierarchical classification. Molecular classification of bacteria. structure, morphological features and chemical nature of viruses. Kingdom monera; Habitat, structure and morphological characteristics and life cycle of; Cyanobacteria, Archaeobacteria, Eubacteria. Kingdom Protista;- Habitat, structure and morphological characteristics and life cycle of protozoans, algae and slime moulds. Kingdom Mycota;- Habitat, structure and morphological characteristics and life cycle of; ascomycetes, deuteromycetes, zygomycetes and oomycetes. Kingdom Plantae- Habitat, structure and morphological characteristics of bryophytes, pteridophytes, gymnospermae and angiospermae. Kingdom animalia;- Invertebrate and origin of animal diversity. Symmetry, cephalisation and gastrulation. Habitat, structure and morphological characteristics and life cycle of porifera, cnideria, platyhelminthes, nemertines, rotifers, nematode, acanthocephalia, annelid, mollusca, Echinodermata, and chordate.

BIO 172: General Biology Practical

Testing for the presence of food substances, Diffusion and osmosis experiments. Observation of cells and tissues of selected plants and animal species. Investigations on physiological processes affecting photosynthesis. Observation of mitosis in onion bulb. Observation of cyst and ova of parasitic worms. Observation of fungi hyphae, and spores, bacteria cells, protozoan specimens and algae. Observation of Plant specimens. Observation of invertebrate animal specimens. Preparation of microscopic slides. Basics of photometry, colorimetry, chromatography, electrophoresis.

GST 215: Introduction to Entrepreneurial Studies II

The course is a continuation of GST 125 (Entrepreneurial Study 1). Attention is given to management of people (Personnel Management), material management and purchasing, money (financial management), machinery (technology) management; concept of marketing, market segmentation; product: price, promotion, place, salesmanship, personal selling, available trade for entrepreneurs and decision making, students are expected to be exposed on some of the entrepreneurial skills.

GST 222: Studies in Peace and Conflict Resolution

This course focuses on the basic concept of peace and conflict resolution; peace as a vehicle of unity and development; conflict issues; types of conflicts e.g. ethnic/religious/political/economic conflict; root causes of conflict and violence in Africa; indigene/settler phenomenon; peace-building; management of conflicts and security; elements of peace studies and conflict resolution; culture of peace mediation and peace-keeping, Alternative Dispute Resolution (ADR); Dialogue and arbitration in conflict resolution; role of international organization in conflict resolution e.g. Economic Community of West African States (ECOWAS); African Union; United Nations; communal/indigenous conflicts; individual conflict terrorism

DEPARTMENT OF ANATOMY

History of the Department

The Department of Anatomy, Faculty of Medical Science of the College of Medicine and Health Sciences of Madonna University, Nigeria, Elele campus was established in 2003 academic year with the approval of the University Senate.

Philosophy

The philosophy of the department is derived from and complements that of the University. It is to prepare students for life of honour, dignity and responsibility as educated citizens with the knowledge, skills, motivation and competences for the practice of the medical profession in all its ramifications.

Aims and Objectives

The anatomy curriculum in the MBBS programme is designed to provide a comprehensive study of the functional and architectural components of the human body. This will be achieved by examining and dissecting the human body, and examination of the body using modern imaging techniques. It includes didactic lectures on the functional, applied anatomy and development of organs and tissues, and the study of the topographical anatomy of the whole human body, in part by dissection supplemented with demonstrations using pre-dissected specimens, radiographic images, anatomical cross –sections, anatomical models and videos

At the completion of the course, the student should be able to

- (a) Identify, describe and demonstrate the essential features of the human body both at tissue, organ and system levels.
- (b) Demonstrate in the living subject the position, extent and functional integrity and/or competence of organs and systems
- (c) Identify the position and extent of normal structures of the human body in x–rays, contrast and air studies, angiograms, tomograms, ultrasounds and other scanning techniques.
- (d) Identify structures at tissue and cellular levels with the aid of different types of microscopes
- (e) State the anatomical basis of some clinical, hereditary or embryological abnormalities

The course structure follows the following patterns:

- (i) Lectures
- (ii) Seminars
- (iii) Tutorials
- (iv) Practical classes

COURSE DESCRIPTION

ANT 211: Introduction to Anatomy, Gross Anatomy of Upper & Lower Limbs

A. History of Anatomy: History of Anatomy from Galen through Hippocrates to the present day. Development Anatomy from Art form to the present day scientific study.

B. Introductory Anatomy: Descriptive terms, planes and terms of relationship of the human body, terms of comparison; Attachment of muscles, types of muscles, movements of joints; Osteology, principles of kinesiology, general organization of body systems.

C. Upper Limb: Pectoral region and mammary gland; Axilla and brachial plexus; Back; Deltoid and scapular regions, arm, forearm, hand, bones and joints.

D. Lower Limb: Front and medial sides of the thigh, gluteal region, back of the thigh and popliteal fossa; Leg; Sole of foot, bones and joints; Surface Anatomy, Applied and; Radiological Anatomy of Upper and Lower Limbs.

ANT 221: Histology of Basic Tissues

Components of the cell, cell cycle, chromosomes, protein secretion and transcription of DNA. Introduction to light microscopy, electron microscopy and units of measurement. Basic tissues of the body, the epithelial, connective tissues, muscle and nervous tissue.

ANT 231: General Embryology

Gametogenesis, cyclic changes in the female genital tract, fertilization; Cleavage, blastocyst, gastrulation and formation of germ layers; Segmentation of mesoderm, folding of embryo, fetal membranes; Umbilical cord and placentation; Development of limbs; Teratology - Developmental anomalies and clinical syndromes.

ANT 212: Gross Anatomy of Thorax, Abdomen, Pelvis & Perineum

A. Thorax: Thoracic wall and Thoracic cavity; Pleura and lungs, bronchial tree and bronchopulmonary segments; Mediastinum: Subdivisions, Pericardium and the Heart, Great Vessels of the thorax, esophagus, cardiac plexuses, thoracic duct; Diaphragm.

B. Abdomen: Anterior abdominal wall and Groin; External genitalia; Peritoneum; Stomach and intestines, blood supply; Liver and biliary apparatus; Pancreas; Spleen; Kidneys and Suprarenal glands; Posterior abdominal wall- muscles and fascia, lumbar plexus, abdominal aorta, IVC

C. Pelvis and Perineum: Male and female perineum; Pelvic wall and floor; Pelvic peritoneum; Viscera, nerves and vessels; Surface Anatomy; Radiological Anatomy

ANT 222: Systemic Histology I

Histology of the: Cardiovascular and lymphoid systems; Respiratory system; Digestive system; Urinary systems; Genital systems; Electron micrograph studies of each organ.

ANT 232: Systemic Embryology

Development of Cardiovascular system; Integumentary system; Respiratory system; Digestive system; Urogenital system; Developmental anomalies and clinical syndromes; Pharyngeal Apparatus (Head & Neck).

ANT 242: Neuroanatomy I

Neuroembryology; Neurocytology; Organization of the Nervous System; Meninges; Spinal cord – Gross anatomy, internal structure, ascending and descending pathways; Hindbrain (medulla oblongata, pons & cerebellum); Midbrain

ANT311: Gross Anatomy of Head & Neck

Face and Scalp; Cranial Cavity; Orbit; Parotid region; Temporal and infratemporal regions; Side of the neck; Submandibular region, nerves and vessels in deep dissection of neck; Thyroid and Parathyroid; Pre-vertebral region and joints of neck; Mouth and Tongue; Pharynx; Nasal cavity and Paranasal air sinuses; Larynx; Ear and Eye; Radiological and applied anatomy of the Head and Neck.

ANT 321: Systemic Histology II

Histology of the: Special senses (Eye, Ear & Chemical Senses); Nervous system; Endocrine system; Skin, gland of the skin, Structure of the nails and hair; Electron micrograph studies of each organ.

ANT 341: Neuroanatomy II

Diencephalon-Thalamus, Hypothalamus, Epithalamus, Metathalamus & Subthalamus; Basal motor nuclei and extrapyramidal disease; Cerebral hemispheres- gross and internal anatomy, cytoarchitecture and phylogeny; Ventricular System of the brain; CSF production, circulation and absorption; Blood supply of the brain; Visual and Auditory pathway

DEPARTMENT OF MEDICAL BIOCHEMISTRY

AIMS AND OBJECTIVES FOR TEACHING OF MEDICAL BIOCHEMISTRY

At the end of their pre-clinical training, the students should be able to:

- (a) Have a basic knowledge of Biochemistry in relation to development and causes of diseases
- (b) Know the Biochemistry composition of organs and tissues in the body
- (c) Understand how the structure and function of macromolecules in the human body are related
- (d) Have an in-depth knowledge of nutritional value of local foodstuffs, nutritional disorders and Biochemical basis of managing nutritional disorders
- (e) Develop and understand laboratory skills in the diagnosis of diseases and forensic medicine

The course structure follows the following patterns

- (v) Lectures
- (vi) Seminars
- (vii) Tutorials
- (viii) Practical classes

COURSE DESCRIPTION

BCH 207: Introduction to Medical Biochemistry

Historical perspectives of biochemistry. The living cell; organization and molecular architecture, types of cells and their characteristics. The structure, size and functions of organelles. Biomolecules and the origin of life. The structural units of macromolecules- structures and functions of amino acids, monosaccharides, glycerol, fatty acids and nitrogenous bases. Inorganic synthesis of building units. Chemistry of amino acids, proteins and their derivatives. Measuring techniques in biochemistry-cell fractionation, chromatography (paper, thin layer, column, HPLC etc) calorimetry, spectrophotometry etc. Classification and hierarchical organization of proteins-primary, secondary, tertiary, and quaternary structures of proteins (with examples); determination and biochemical applications of the structures. The physical and chemical properties of water; acidity and alkalinity, pH, pOH, pKa, pKi values and their effect on cellular activities; buffer solutions- preparations of buffer solutions. The nature, classification and function of enzymes; introduction to enzyme kinetics.

BCH 204: Metabolism of Biological Molecules & Bioenergetics

Structure and Organization of Biological Membranes. Mitochondrial electron transport and oxidative phosphorylation. Photosynthesis: Photoreceptor pigments,

light and dark reactions of photosynthesis to include photosystems I and II, cyclic and non-cyclic photophosphorylation and a simple treatment of CO₂ fixation. Metabolism of Lipids: Digestion and absorption of lipids. Role of lipoproteins in lipid transport. Metabolism of lipoproteins in health and disease. Storage and mobilization of energy stores in adipocytes. Fatty acid formation; Introductory bioenergetics. Energy rich compounds. The role of ATP in energy exchange reactions. Oxidation-reduction. Simple calculations based on these concepts. Carbohydrate Metabolism: Digestion and absorption, in G.I.T. Glycolysis, citric acid, pentose phosphate and glyoxylate cycles. Gluconeogenesis and a brief outline of glycogenolysis and glycogenesis. Metabolism of amino acids and proteins: Digestion and absorption of protein in the G.I.T. The concept of nitrogen balance and essential amino acids. Amino acid catabolism to include the cellular strategies for deamination and the fate of the C-skeletons; Significance of glutamine and alanine cycles. Urea synthesis. A brief outline of biotransformation processes and detoxification strategies in the metabolism of xenobiotics.

BCH 234: Nutrition and Nutritional Biochemistry

The course in Nutrition is aimed at exposing medical students to the pivotal role of adequate and appropriate nutrition in virtually all health conditions, and how in particular, traditional beliefs, customs and habits in developing countries like Nigeria affect the growth and development of children. The course would serve to bridge the biochemistry course in basic nutrition with exposure to nutrition in pediatrics, medicine and surgery by emphasizing the pathophysiological aspects, major classes of foods and their functions: carbohydrates, fats, protein, vitamins, minerals, trace elements, dietary fibre. Daily food required and recommended intakes, protein calorie malnutrition, biochemical changes in kwashiorkor and marasmus. Role of protein deficiency in growth and development, consequences on organs and in particular brain growth; vitamin deficiencies and consequences of over nutrition – obesity, overweight and consequences; dietary fibre and diseases. Food preservative and adverse effects; Diet and dental disease; Nutrition and cancer, methods for the assessment of nutrition status. Nutritional requirements and nutritional disorders. Biochemical functions of trace elements. Liposoluble vitamins. Hydrosoluble vitamins. Coenzyme structure and functions

BCH 301: Special Topics in Medical Biochemistry

Biochemistry of Blood and Special Tissues. Composition of Blood and other body fluids. Separation of blood into constituents, Serum proteins – properties and functions, Clotting mechanism. Role of anti-coagulants. Haemoglobin: Structure, properties and functions. Haemoglobin metabolism. Haemoglobins and haemoglobinopathies. Immunochemistry Molecular basis of immune reactions. Structure and function of immunoglobulins. Antigen-Antibody interactions. Immunological laboratory methods. Neurochemistry The neuron: Structure,

composition and metabolism. Neurohormonal regulatory mechanism. Metabolic antagonism in neurochemistry. Biochemistry of muscle contraction Endocrinology Structure, function and molecular mechanism of action of steroid, thyroid and polypeptide hormones. Hormonal deficiency diseases and their detection. Methods of hormonal assay. Xenobiotics and Forensic Biochemistry Detoxification mechanisms, metabolism of foreign compounds. Induction of Microsomal enzymes and drug resistance. Medico-legal: Blood, Urine and sweat test. Recent development in forensic techniques.

BCH 317: Chemistry and Metabolism of Proteins & Nucleic Acids

Genome organisation and biosynthesis of proteins. Metabolism of purines and pyrimidines, nucleosides and nucleotides; abnormalities in nucleic acid metabolism-xeroderma pigmentation and skin cancer

DEPARTMENT OF PHYSIOLOGY

COURSE OBJECTIVES

At the end of the training,

- (a) The students should have basic knowledge of the principles of medical physiology.
- (b) The students should be able to correlate structure and function of the human body.
- (c) The knowledge gained in the course will enable students to understand the physiological basis of diseases and proffer solutions.

The course structure follows the following patterns

- (i) Lectures
- (ii) Seminars
- (iii) Tutorials
- (iv) Practical classes

COURSE DESCRIPTION

PIO 201: Introductory Physiology and Hematology

Introduction to Physiology and its place in Medicine. The composite cell, cell membrane and transport mechanisms, membrane potentials. Physiology of excitable tissues. Biotechnology and Human Genome. General characteristics and functions of blood. Properties and functions of plasma red blood cells; factors involved in erythropoiesis, blood groups. White blood cells; origin, type, properties functions, antigenicity and immunities. Platelets and hemostatic mechanisms. Reticulo-endothelial system. Clotting and fibrinolytic systems. Immunity and Immunodeficiency disease and HIV.

PIO 223: Cardiovascular Physiology

Overall plan and functions of the C.V.S. Physiologic anatomy of the heart, mechanical events of cardiac cycle, cardiac output and its estimation, E.C.G. The Vascular system; Cross sectional area of different vascular groups, systolic, diastolic, pulse and mean pressures, exchange of fluids across the capillaries, venous and central venous pressures. Integration of C.V.S functions; central control centres, regulation of systemic blood pressure. Cardio-vascular adaptations in health and disease. Circulation through special areas. Vascular endothelium in cardiovascular control.

PIO 264: Renal Physiology, Body Fluids and Temperature Regulation

The skin: functional anatomy, temperature regulations; abnormalities of temperature regulation. Metabolism: factors regulating metabolism, conditions for measuring basal metabolic rate. Compartmentalization and composition of body fluids. Physiologic

anatomy of the kidney, renal circulation and autoregulation. Glomerular filtration. Tubular transport. Urine formation: Counter-current system. Water volume and ionic regulation. Acid-base balance. Micturition. Renal handling of electrolytes. Current concepts of concentration and dilution of urine. The rennin-angiotension system. Renal disorders.

PIO 212: Respiratory Physiology

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. O₂ and CO₂ transport. Control of respiration, Hypoxias, O₂ treatment, abnormal types of breathing. Altitude and depth acclimatization. Respiratory adjustments in health and disease. Aerospace physiology. Deep sea diving.

PIO 232: Neurophysiology I

Development and general plan of the central nervous system. Functional anatomy of brain and spinal cord. Nerve: morphology, generation and conduction of action potential. Sensory division of the nervous system; morphology receptors, sensory pathways, reticular formation, thalamus and sensory cortex. Synaptic transmission, neurotransmitters. Basic characteristics of sympathetic and parasympathetic divisions of the autonomic nervous.

PIO 341: Gastrointestinal Physiology

Physiologic anatomy of the gastrointestinal tract. Review of smooth muscle function. Secretions in the G.I.T. and their control. Movements of the gastrointestinal tract. Digestion and absorption of various food substances. Liver and its functions. Disorders of G.I.T. The Gut as an endocrine organ.

PIO 355 Endocrinology and Reproduction

Endocrine system: Introduction and neuroendocrine relationship. Hypothalamo-Pituitary axis, Endocrine glands; normal, hypo – and hyper-functions. Other hormones of some clinical importance. Physiologic anatomy of male and female reproductive system. Male and female sex hormones. Cyclicity of hormone secretion in females. Physiology of contraception. Assisted fertility techniques.

PIO 333: Neurophysiology II

Pathophysiology of pain. The association areas of the cortex. Physiological basis of motivated behaviours. Muscle spindle function in motor control. Maintenance of posture. Mechanism of locomotion.

Aims and Objectives for Teaching of Community Medicine

At the end of their training in Community Health, the doctors should be able to:

- (a) Know the concept of Community Health and its relevance in Nigeria health – care system
- (b) Make community diagnosis
- (c) Carry out epidemiological studies to identify prevalent health problems in the community and determine the effective means of alleviating the problems;
- (d) Know how to plan, organize and evaluate appropriate health programme
- (e) Seek and mobilize resources for health care management
- (f) Develop the spirit of team work among the members of health team
- (g) Exhibit the highest principle of ethics in the promotion of health

The Course Structure follows the following patterns

- (a) Didactic lectures
- (b) Tutorials and Discussions
- (c) Seminars
- (d) Field visits to health related institutional and industries
- (e) Clinical

COURSE DESCRIPTION

COM 211: Introduction to Community Health

Sub-units of Community Health; Brief History of Medicine; Behavioural and Non-behavioural factors in health and Disease; Doctor – patient Relationship; Doctor's Role in Health Promotion and Protection

COM 221: Introduction to Medical Statistics

Statistics and Human Biology and Medicine; Collection of data; Analysis and presentations of Data; Measures of Health Survey

COM 311: Human Ecology/Medical Sociology

Concepts of Medical Sociology; Culture and health; Components of environment; Community diagnosis; Factors Affecting a Community; Man's Interaction with Environment; History of Medicine

COM 312: Demography and Human Statistics

Population Dynamics, Structure and Growth; Sources of Population Data; Measurement of Health and Disease; Standardization of Vital Rates; Fertility and Mortality

COM 321: Research Methods in Community Health

Sampling Techniques; Design of Medical and Community Health Studies; Design of Questionnaires; Data Collections; Analysis and Interpretation of Data

COM 411: Epidemiology

Control of Communicable Diseases; Control of Non-Communicable Diseases; Field Work in Community Health; International Health

COM 412: Integrated Community Health

Occupational Health; Environmental Health

COM 511: Community Health Project

Community Health Tutorials; Presentation of Projects

COM 611: Computer in Medicine

History of computer, functional components of computer, characteristics of computer, problem solving, flow chart, Algorithms computer Programming, statements, symbolic names, array, subscripts, exposition and control statement. Introduction to basic programming languages, computer application. Application of Computers to Medicine: Introduction to Basic Programming. Data types – constants and variables. Statement types, Assignment types, Input-output Statements. Control Statements. Data Base Management Systems. Creation, access and storage in files. Practical posting to computer centres.

COM 612: Primary Health Care

Eight (8) weeks residence in rural Communities; Environmental Health; Family Health; Immunization; Management of Maternal and Child Health; Problems; Health Education; Medical Ethics

LABORATORY MEDICINE

The departmental objective of courses in laboratory medicine that is, Medical Microbiology, Chemical Pathology, Haematology and Morbid Anatomy is to provide students with the needed knowledge of the pathological basis of disease and pathophysiology of common disease state in Nigeria. Additionally, it aims at providing knowledge for laboratory tests and to suggest the correct management of disease states following laboratory findings etc.

COURSE DESCRIPTION

PAT 361: General Pathology

- a) Cell Pathology (The normal cell, concept of Homeostasis, cellular injury and cell Death: Necrosis and Apoptosis)
- b) Inflammation
 - i. Acute (Cardinal signs and Cause, The biologic purpose of inflammation and its natural history disorders of acute inflammation, The vascular and Cellular events in acute inflammation, The chemical mediators of acute inflammation)
 - ii. Chronic (causes, types and natural history, granulomatous inflammation, wound healing and tissue repair)
- c) Cell and tissue growth (the cell cycle. Disorders of tissue growth I; Agenesis, Atrophy, Hypertrophy, Hyperplasia, metaplasia, Dysplasia)
- d) Neoplasia (definition and nomenclature of tumours, Oncogenesis, the systematic effects of tumours, paraneoplastic syndromes. The effects of hosts on tumours. Tumour immunology)
- e) Fluid and Haemodynamic Disorders (Infarction, Thrombosis and Embolism, shock)
- f) Immunopathology (The organization of the immune system. Hypersensitivity, Autoimmunity, Immune Deficiency Disorders, The pathology of Acquired Immune Deficiency Syndrome (AIDS), Amyloidosis)
- g) Growth abnormalities (Chromosomes, Single genetic disorders etc,

PAT 462: Systemic Pathology

- a) Respiratory system (Congenital anomalies, Pneumonia, Chronic Obstructive Airway Disease (emphysema, bronchitis, bronchial asthma, chronic bronchitis). Pulmonary Tuberculosis, Brochogenetic carcinoma)
- b) Cardiovascular system (Heat temperature, atherosclerosis, Aneurysm. Rheumatic fever, Infective endocarditis, Cardiomyopathy)

- c) Gastro-intestinal System (Peptic ulcer, Gastric carcinoma, Colonic carcinoma)
- d) Renal System (Clinical manifestation of renal diseases, Glomerulonephritis, Pyelonephritis, Tumors of the kidney, Polycystic kidney disease)
- e) Central nervous System (Intracranial haemorrhage, Hydrocephalus, Meningitis, trypanosomiasis, Brain tumors)
- f) Liver (Hepatitides Hepatitis viruses, Cirrhosis, Hepatocellular carcinoma–yellow fever, Lassa fever)

PAT 464: Practicals

The students shall be exposed to gross morphology of diseased organs using museum pots and demonstration of autopsies. They shall also be exposed to microscopic features of diseases using histopathologic slides.

MCB 361: Bacteriology

Introductory Bacteriology; Bacterial cell structure and function; Classification and Identification of Bacteria Microbial genetics and bacterial variation; introduction to infectious diseases: microbial ecology and normal flora, pathogenicity, Virulence etc. Antimicrobial methods: Sterilization and Disinfection. Chemotherapy and Antimicrobial agents; Antimicrobial drug resistance Serological diagnosis infections; Epidemiology, pathogenesis, Clinical features, laboratory diagnosis, Treatment/Control of disease caused by the following micro-organism Staphylococci Streptococci Neisseria Parvobacteria/Pasteurella Brucella spp, Bordetella Spirochaetes Aerobic gram-positive bacilli: Corynebacterium, listeria, Bacillus spp. Propionibacterium, Antinomycetes, Nocardia Enterobactria: Escherichia coli, Klebsiella, Salmonella typhi, proteus, Shigella spp, Vibrio cholera and other vibrios Campylobacter Mycobacterium tuberculosis Atypical mycobacteria Mycobacterium leprae, mulcerns Chlamydia/Rickettsia/mycoplasma Introduction to anaerobia bacteriology, classification, gram negative anaerobic infections. Clostridial spp.

Practical Bacteriology: Students are expected to be able to list all the basic safety procedures in the microbiology laboratory. Demonstrate ability to prepare film and stain with Grams reaction. Ziehl-Neelsen reaction, negative staining reaction and spore staining reaction. Demonstrate ability to prepare wet mounts to show pus cells, shape of bacteria motility, demonstrate ability to use the light microscope. Demonstrate ability to inoculate agar plates with different specimen. Describe colonial appearances of bacteria on an agar plate in specific manners such as: Demonstrate ability to count bacteria in water, milk or food, clothing eg. Hospital blankets, linen and urine, demonstrate bacterial flora of the skin, mouth, hair, teeth, gingival crevices, perform and interpret sensitivity test using disks impregnated with

antibiotics; demonstrate ability to perform sterilizing efficiency test for 'Dettol' (Chlorohexyphenol), boiler and autoclaves, 'Savlon' (Centrimide) and hibitane (Chlorohexidine); demonstrate ability to perform slide agglutination tests for staphylococci, Salmonella spp. and E. Coli.

MCB 362: Virology

Classification and General Properties of viruses Replication of animal viruses Laboratory diagnosis of viral infections: Collection, transport, preservation and Cultivation of clinical specimens. Epidemiology, pathogenesis, Clinical Features, laboratory diagnosis, treatment/Control of disease caused by the following viruses. Polio and other enteroviruses. Hepatitis viruses. Yellow fever virus and other viral causes of hemorrhagic fevers: dengue, Lassa, Ebola, and Human etc. Rhodoviruses and other Zoonotic viruses Orthomyxoviruses/paramyxoviruses and rubella viruses Retroviruses (HIV/AIDS/HTLV) Prions Protein/scrapie type agents Tumors of viral etiology.

Practical Virology: Students will be expected to: Recognise and interpret the following serological test for the identification of viruses: Complement fixation test (CFT), Neutralisation test (NT) and Haemagglutination test (HAT). Demonstrate ability to recognize pox forming viruses. Demonstrate ability to recognize the effects of virus in experimental animals.

MCB 363: Mycology

General features of fungi, classification of fungi and fungal disease. Laboratory diagnosis of fungal infections: collection, transport/preservation and identification of clinical specimens. Fungi causing superficial, cutaneous and sub-cutaneous disease. Topic fungi causing systemic human infections. Mycotoxins Antifungal chemotherapy Pneumocystis carinii

Practical Mycology: Students will be expected to demonstrate ability to perform skin scrapings for the diagnosis of superficial dermatomycoses, demonstrate ability to recognize different morphological types of fungi under the microscope. Recognise colonial morphology of the fungi on Sabouraud's agar

MCB 467: Proto-Zoology or Parasitology

Introductory Parasitology Classification of parasites Host parasite relationships Protozoa (General Characteristics) Epidemiology, pathogenesis, Clinical Features, Laboratory diagnosis, Treatment and Control of disease caused by the following: the Apicomplexans: Plasmodium, Babesia, Toxoplasma The Haemoflagellates: Trypanosomes, Leishmaniasis; Genitor-urinary and intestinal parasites: Giardia

lamblia, trichomonas, Dientamoeba fragilis, Microsporidium. Balantidium isospora and Saracocystis The Amoebas including Acanthamoeba and Neaglaria.

Practical Parasitology: Students will be expected to demonstrate ability to perform thin and thick films. Demonstrate ability to perform staining with Giemsa, Wright's, Field's and Leishman's Stains. Demonstrate ability to recognize Plasmodium spp. and Trypanosoma spp. in stained smear given a properly working light microscope. Demonstrate ability to prepare wet 'mounts' and identify: Trophozoites, Cysts, Giardia, Trichomonas, E. Coli.

MCB 462: Medical Helminthology

The Trematodes/Flukes liver Flukes: Clonorchis sinensis, Fasciola hepatica, Heterophyes Lung flukes: Paragonimus spp, intestinal flukes Fasciolopsis buski, blood flukes: Schistosomes the cestodes/Flatworms, Taenia spp. (solium, and saginata), Echinococcus granulosus, Diphylobothrium latum, Hymenolepis nana and H. diminuta. The nematodes/Roundworms Intestinal roundworms: Ascaris lumbricoides, Enterobius vermicularis and the Hookworms. Tissue roundworms: Trichinella spiralis and the filarial worms Dracuntiasis Arthropods of medical importance Zoonosis Myasis,

Practical Helminthology: Students will be expected to demonstrate the ability to prepare wet mounts from stool with saline and iodine. Demonstrate ability to prepare thin and thick films for the identifications of microfilaria. Demonstrate ability to prepare wet mounts for urine. Demonstrate ability to recognize helminths from tissue biopsy.

MCB 464: Infectious Diseases

Aetiology, pathogenesis, Clinical features, pathology, laboratory diagnosis and treatment of the following

Central Nervous System infections: Meningitis, Encephalitis, Brain abscesses, Tetanus and Botulism, viral diseases, parasitic CNS, slow virus infections, neurological diseases of virus etiology. Infections of the cardio-Vascular System: Endocarditis, Septicemia, rheumatic Carditis Respiratory tract infections: Upper respiratory tract infections; - Coryza. Pharyngitis, Tonsillitis, Otitis media, Sinusitis, Epiglottitis, laryngitis and tracheitis, diphtheria. Lower respiratory tract infections: the pneumonias, Tuberculosis, parasitic infections of respiratory tract, systemic mycosis and SARS. The Diseases of the gastrointestinal tract: Diarrheal diseases-Salmonellosis, Shigellosis, yersinosis, S Campylobacteriosis, Traveler's diarrhea. Cholera, Helicobacter pylori and ulcer disease. urinary Tract infection: Cystitis,

nephritis, Reproductive Tract infections/STDs, Skin and Soft tissue infections, Anaerobic infections Microbes of dental Importance, HIV/AIDS, Nasolacrimal Infections. Diseases: strategies for control, Antimicrobial agents and chemotherapy, Vaccination, Passive and Non-specific immunotherapy.

MCB 466: Applied Medical Microbiology

Central Nervous system: Causative agents and laboratory diagnosis of meningitis. Aetiology of encephalitis. Respiratory Tract: Aetiological agents of upper and lower respiratory tract infections. Gastrointestinal Tract: Aetiological agents of gastroenteritis and food poisoning. Genitourinary System: Aetiological agents of sexually transmitted diseases and urinary tract infections. Cardiovascular System: Aetiological agents of infective endocarditis and Rheumatic Carditis. The role of blood culture in diagnosis of pyrexia of unknown origin (P.U.O.)

Skin: Aetiological agents of superficial dermatomycoses and Pyoderma, cellulitis and myiasis. Musculoskeletal System: Aetiological agents of osteomyelitis, deep mycosis, abscesses, wound infections and pyomyositis. Pathophysiology of tetanus. Aetiological agents of eye infections. General Principles of antibiotic and chemotherapy modes of bacterial resistance to antibiotics, Viral vaccines, Prophylactic immunization. Transmission and control of infective agents including sexually transmitted infections, hospital infections and universal infection prevention measures.

MCB 468: Practical Medical Microbiology

Instrument use of the laboratory and safety measures, in Microbiology introduction to Laboratory equipment and uses, Media (preparation & identification), Culturing techniques (Streak plate, streaking etc), Staining Techniques (Grams, Zeil Neelsen etc) Specimen preparation and analysis, identification of common intestinal parasites.

CPY 461: Human Nutrition

Role of proteins deficiency in growth and development, consequences on organs and in particular brain growth; vitamin deficiencies and consequences of over nutrition – obesity, overweight, consequences, treatment and prevention. Excess in vitamins and some consequences – Dietary fibre and disease. Food preservative and adverse effects Diet and dental disease, Nutrition and cancer, Methods for the assessment of nutritional status.

CPY464: Clinical Chemistry

Definition and causes of hypernatraemia and hyponatraemia; Definitions and causes of Hyperkalaemia and Hypokalemia. Investigations of water and electrolyte

imbalance, Calcium and Phosphate disorders: parathormone, calcitonin and cholecalciferol. Definition and causes of hyper and hypocalcaemia. Definition and causes of rickets, osteomalacia and osteoporosis. Blood glucose homeostasis: glucose tolerance tests – performance and interpretation; diabetes mellitus; Formation of free fatty acid-ketone bodies and lactate, Plasma lipids, cholesterol, triglycerides, phospholipids and non-esterified fatty acids; Plasma lipoproteins and causes of hyper and hypolipoproteinaemia. Concept of risk factors for diseases and significance in prevention; plasma proteins – Reference values, separation of fractions and variations in health and disease. Paraproteinaemias; Bence-Jones Proteinuria and significance; Plasma enzymes – Transaminases, alkaline and acid phosphatases, creatine kinase, lactic dehydrogenases and their uses in diagnosis and management of diseases; Definition, causes and consequences of some common inborn error of metabolism; Galactosaemia, lactose intolerance, Albinism, aminoacidurias, phenylketonuria; Definitions, causes and consequences of Azotaemia, uraemia, Creatinine clearance; Tests of hepatic function; jaundice: hepatocellular and obstructive; Functions of the hypothalamus and anterior pituitary, Thyroid functions and investigation of thyroid disorders; Assessment of gonadal function in men and women; Diagnosis of pregnancy, assessment of fetal and placental integrity; Biochemical diagnosis of cancer, Tests of gastrointestinal functions.

CPY 466: Chemical Pathology Practical and Laboratory Analysis

Demonstrations: Specimen collection – different types of samples, tubes, sample identification, separation of plasma or serum, collection and preservation of urine specimens.

Determination of blood gases and blood pH.

Determination of glucose:

[a] Glucose estimation in blood by the glucose oxidase method, [a specific method]

[b] Glucose estimation in the same blood by the ferricyanide reduction method [a non-specific method]

[c] Strip test for glucose in blood [semiquantitative method]

Plotting of oral glucose tolerance test curves for

[a] A normal patient and

[b] A diabetic patient.

Urinalysis: determination of urine specific gravity osmolality and qualitative tests for protein, glucose and reducing substances, ketones, bilirubin, urobilinogen and blood. Haemoglobin and haemoglobin derivatives in urine. Spectroscopy of haemoglobin and its derivatives in blood.

Occult blood in faeces.

Different methods of protein estimation.

Electrophoresis of plasma proteins, haemoglobins and isoenzymes.
 Demonstration: [i] Column chromatography
 [ii] Paper and thin layer chromatography of sugars and amino acids in urine.
 Demonstration: Determination of serum enzymes
 Demonstration: Radioimmunoassay of hormones in blood
 Demonstration: Estimation of 17 – exosteroid in urine, Biochemical analysis of cerebrospinal fluid [CSF]
 Demonstration: Methods of vitamin analysis in blood, Estimation of Immunoglobulins
 Agglutination/Agglutination inhibition tests
 Demonstration: Immunoelectrophoresis and gel. Immunodiffusion technique.
 Demonstration: Rosette tests for cellular Immunity appraisal
 Demonstration: and exercise: Interpretation of Laboratory results.

HEM 361: Basic Immunology

Introduction to Immunology Immunity (Acquired and Innate) Hypersensitivity relations Immune Tolerance and Autoimmunity, Immunization (Concepts and principles) Immunological Concept in Laboratory Diagnosis Complement Systems, Major Histocompatibility Complex (MHC Concept) Antigen and Antibody (Classification and function), Immunodeficiency.

Innate Immunity – factors affecting e.g. age, species specific anatomical factors [skin, membranes] etc. Nutrition, hormones; Acquired immunity-active and passive – factor affecting acquired immunity; Antigens and their determinants; Lymphoproliferative organs and their function in the immune responses; Structure and function of immunoglobulins; Biosynthesis of immunoglobulins; The thymus and its role in the immune response; Deficiencies in cell-mediated immunity Hypersensitivity – immediate and delayed Anaphylaxis, Immune tolerance. Tissue and organ transplantation. HLA system, Immunosuppression; Malnutrition and Immunity. Immunity and Bacterial infections. Immunity and viral infection. Immunity and protozoal and Helminth infestations. Immunity and fungal infections. Vaccination and Immunization, Autoimmunity diseases; Possible mechanisms involved in pathogenesis. Immunohematology – ABO System, Rhesus incompatibility, Immunity and malignancies, tumor antigens.

HEM 460: General Haematology And Blood Transfusion

Haemoglobins

- [i] Structure and functions of haemoglobins
- [ii] Genetic control of haemoglobin synthesis
- [iii] Abnormal haemoglobin structure and function
- [iv] Clinical syndromes associated with abnormal haemoglobins.
- [v] Genetic counseling
- [vi] Antenatal diagnosis of haemoglobin –opathies.

Anaemias

- [i] Definitions: Classification of Anaemia
- [ii] Clinical Aspects of Anaemias Diagnosis of Anaemias
- [iii] Anaemias of infections: Deficiency Anaemia.
- [iv] Haemolytic Anaemias
- [v] Anaemias associated with systemic diseases.

Leukaemias

- [i] Definition: Classification
- [ii] Acute and Chronic Leukaemias
- [iii] Diagnosis: Management

Haematological Solid Tumours

- [i] Hodgkins lymphoma
- [ii] Non-hodgkin's lymphoma
- [iii] Burkitts Lymphoma; Definition, Presentation, Diagnosis and management.
- [iv] Monoclonal Gammopathies, e.g. Myelomatosis, Waldstrom's Disease

Platelets:

Inherited and Acquired disorders including purpura, Thrombosis etc.

Blood Coagulation and Fibrinolysis

- [i] Haemostasis Venous thrombosis
- [ii] Management of bleeding disorders
- [iii] Anticoagulant therapy.

Blood Groups

- [i] Red cell antigens and antibodies, and their interaction
- [ii] Presentation of red blood cells
- [iii] Indications for blood transfusion
- [iv] Management of blood transfusion reactions
- [v] Rhesus incompatibility, Haemolytic disease of Newborn

HEM 468: Practical Haematology

- [i] Principals of Haemoglobin and haematocrit estimation
- [ii] Blood films and staining WBC and Platelet Counts. Film of SS and SC patients.
- [iii] Film of iron-deficiency and folate-deficiency anaemia
- [iv] E.S.R. estimation
- [v] Tests for Thrombin time, PT/PTTK estimation of Fibrin degradation products.
- [vi] Haemoglobin electrophoresis and sickling test.

DEPARTMENT OF PHARMACOLOGY & THERAPEUTICS

The department of Pharmacology and Therapeutics aims essentially to provide students with the knowledge to understand the properties of drugs and thus be able to select drugs rationally for any form of ailment.

COURSE DESCRIPTION

PHA 371: General Pharmacology

Scope of Pharmacology: Origin and Sources of Drugs; Routes of Administration of Drugs; Pharmacokinetics; Absorption of Drugs; Excretion of Drugs; Biotransformation of Drugs; Structure Activity Relationship; Mode of Action of Drugs; Types of Drug Action. Drug Action in Man-compliance individual Variations; Presence of other drug; Genetic Effects; Tolerance and Tachyphylaxis; Effects of Disease; Drug Toxicity, Adverse drug Reactions; Drug Dependence; Drug Interactions.

PHA 372: Systemic Pharmacology

Neurohumoral Transmission: Drugs on Neuroeffector Sites: Autopharmacoids. Review of Neurohumoral Transmission; Transmitters in the Central and Peripheral Nervous system: Cholinergic and Adrenergic Receptors; Cholinergic Stimulants and Blocking agents; Stimulants and Blocking agents Autocoids – Histamine receptors and Histamine antagonists; 5-hydroxytryptamine; Renin – Angiotensin; Kinins; Plasma Kinin, Bradykinin-kallikrin; Prostaglandins; Leukotrienes; Cyclic Nucleotides and other Mediators.

Drugs Acting on the Gastrointestinal Tract

Vomiting – Antiemetics; Constipation – Purgatives; Antacids – Anticholinergics – H₂ antagonists – Ulcer Healing Drugs; Gastrointestinal Hormones – pentagastrin – Secretin; Antidiarrhoeal Drugs; Lactulose; Lipid Disorders – Cholestyramine; Pancreatin, Cho

Drugs Acting on the respiratory System

Oxygen therapy, Bronchodilator drugs; Asthma, Status Asthmaticus; Cough Suppressants Agents; Respiratory Stimulants.

Drugs Acting on Blood and Blood-Forming organs

Anaemias; Iron Deficiency and other Hypochromic Anaemias; Megaloblastic A Cobalamins – Folates; Anticoagulants, Heparin, Coumarin, Indandiones; Fibrinolysis Thrombus; Platelet Aggregation Inhibitors; Blood Lipid lowering Drugs.

Drugs for Treating Cardiovascular Disorders

Heart failure and its drug management; Anti-anginal drugs; Ischaemic heart disease management; Antiarrhythmic drug, Hypertension and its drug management; Vasodilator.

Drugs Acting on the Urinary System

Diuretics; Alteration of urinary pH; Urinary tract infections; Renal failure; Immunity suppressive agents.

PHA 471: Antimicrobial, Antifungal, Antiprotozoal Agents

Microbes in Man; Mode of action of Antimicrobial Drugs; Sulphonamides; Penicillins Aminoglycoside; Lincomycins; Peptide Antibiotics; Drugs Treatment of Tuberculosis Miscellaneous Antibiotics; Vancomycin, Spectinomycin, Fusidic Acid; other Synthetic; Drugs; Nalidixic Acid; Nitrofurantoin; Drug Treatment of Leprosy; Antifungal Agents; Fluorinated Pyrimidines, Imidazoles; Miscellaneous Antifungal Agents; Methisazone; Idoxuridine; Cytarabine; Adenine Arabinoside, Interferons; Humoral Immunity Malaria; Trypanosomiasis; Leishmaniasis; Amoebiasis, Amoebic Liver Abscess; Trichomoniasis; Ankylostomiasis; Ascariasis; Trichiasis; Strongyloidiasis; Enterobiasis; Trichinosis; Filariasis; Loasis; Onchocerciasis; Dracontiasis; Schistosomiasis; Fasciolopsiasis; Clonorchiasis; Paragonimiasis; Taeniasis, Cystercercosis; Hydatid Disease; Diphyllthiasis; Tape Worm.

Anti-retroviral Therapy: Reverse Transcriptase Inhibitors (RTI) including Nucleoside and Non-Nucleoside Reverse Transcriptase Inhibitors (NNRTI); Nucleoside analogues; Protease Inhibitors (PI); and Hydroxy Urea with special emphasis on Retroviral Therapy in Pregnancy, Labour and the Newborn.

PHA 473: Anti-Neoplastic Agents

Major Features of malignant Disease; Review of Cell Kinetics; Cell-cycle specificity; Cell Specificity: Cancer Cell versus Bacterial Infection; Principle of Cancer chemotherapy effects of Antineoplastic Drugs; Alkylating Agents; Antimetabolites; Natural Product Antibiotics; other Antibiotics; Steroid Hormones and Antagonists; Miscellaneous Anti- Agents for Immunotherapy; Radio –activity.

PHA 475: Drugs Acting on Central Nervous System and Antipsychotic Drugs

Special situations of Drug Action, Entry of Drugs in C.N.S.; Non-narcotic Analgesics; opoids; Narcotic Analgesics, Narcotic Antagonists and Partial Agonists; Antipyretic agents; sleep; Barbiturates and Non-barbiturate agents; Alcohols Review of general and local Anesthetic Drugs; Anesthesia in persons already taking drugs Neuromuscular Blocking Agents; Central Nervous System Stimulants; Anticonvulsant Drugs; Epilepsies, Principles of Antiepileptic treatment; Review of different Groups of Antiepileptic Drugs Status Epilepticus, Epilepsy and Special situations – pregnancy; Contraception; Anaesthesia, Surgery, Miscellaneous Anticonvulsant Drugs. Treatment of Parkinsonism, Levodopa; Decarboxylase Inhibitors, Bromocriptine, Amantidine; Anticholinergics; Blockers, Drugs in Myasthenia Gravis.

Antipsychotics and other Drugs Used in Mental Disorders

Psychoses; Depression; Anxiety; Neuroleptics – Phenothiazines; Butyrophenones; Dihydroindoles; Dibenzodiazepines; Rauwolfia Alkaloids. Anxiolytics Benzodiazepines; Antidepressants with sedative properties; Thymoleptics; Tricyclics; Bicyclics; Tetracyclics; Bicyclics; Monoamine Oxidase inhibitors (Hydrazines and Non- Hydrazines); Amino acid precursors of transmitter amines; Amines; Tetrahydroisoquinoline derivatives; Lithium; Psychostimulants; Psychodysleptics.

PHA 476: Special Topics**Drug treatment of Joint Diseases**

Inflammatory Arthropathy and Degenerative Joint Diseases; Metabolic Disposition Arthropathy, Analgesics; Non-steroidal Anti-inflammatory Drugs (NSAID); Corticosteroids; Long-term, Antirheumatic Agents; Gold salts, d-penicillamine; Chloroquine; Immunosuppressive Agents; Levamisole; Gout, Colchicine and Democalcine; phenylbutazone; Indomethacin, Probenecid; Ethiebecid; Allopurinol.

Endocrine System Pharmacology:

Mechanism of action of Hormones, CNS-Hypothalamus – Adenohypophysis – Endocrine Glands, Anterior and posterior Pituitary Hormones; Thyroid Hormones and Antithyroid Drugs; Parathyroid Hormones; Calcitonin Diabetes Mellitus; Insulin; Oral Hypoglycaemics; Adrenocortical Hormones; Glucocorticoids; Mineralocorticoids; Hyperaldosteronism; Sex-Hormones; Oestrogens, Androgens, Progestogens, Antagonists to Hormones; pharmacologic methods of family Planning.

Drugs in Obstetrics and Gynaecology

Drugs in Pregnancy; Drugs Affecting Uterine Motility, Ergotamine, Oxytocin, Prostaglandins.

Dermatological Drugs

General Aspects of the dermal pharmacokinetics; forms of topical application and systemic administration in dermal conditions; Topical antifungal and steroid preparations and adverse effects.

Chemotherapy of Malignant diseases

Practical Classes/Demonstration.

A reasonable number of practical classes and demonstrations should be organized to make the students understand the nature of drug action.

DEPARTMENT OF PAEDIATRICS

The objectives of department of Paediatrics include exposing medical students to principles and practice of Paediatrics and child health and to provide with needed technical skills, knowledge and clinical judgment that would enable them achieve competence in the practice of Paediatrics

At the end of the course, the student should be able to utilize the skills, and attitude he has acquired to perform the following: take and record a good history, carry out a thorough physical examination of a child, demonstrate common abnormal physical signs and interpret them, carry out simple side laboratory tests, recognise childhood disease with particular reference to those prevalent in the Nigerian environment, formulate a reasonable diagnosis based on history and physical examination, confirm his diagnosis by selecting appropriate investigations, have a sound knowledge of therapeutics in order to be able to treat his patient, manage common paediatric emergencies and know when and where to look for help and refer them safely to the care of a specialist at the right time.

COURSE DESCRIPTION

PAE 500: Disease of The Blood

Anaemia in infancy and childhood; Haemoglobinopathies; Leukaemia; Bleeding disorder

PAE 501: Diseases of The Digestive and Genitourinary Systems

Acute diarrhoea and vomiting; chronic diarrhea; fluid and electrolyte imbalance, intestinal parasites; Abdominal pains, malabsorption; G.I.T, Bleeding, Development and structural anomalies of the genitourinary tract.

PAE 540: Paediatric Haematology/Oncology

- Anaemia in infancy and childhood
- Sickle cell anaemia in childhood/Haemoglobinopathies
- Bleeding disorders in childhood
- Leukaemia
- Burkitt's tumour
- Nephroblastoma
- Hepatoblastoma
- Tumours of the central nervous system, Craniopharyngioma, Retinoblastoma
- Reticuloendothelial malignancies

PAE 541: Cardiovascular, Respiratory

Examination of CVS; Congenital heart diseases; Acquired heart diseases; heart failure in infancy and childhood, acute infections of the respiratory tract, chronic respiratory conditions; Bronchial asthma; Pulmonary tuberculosis; Bronchiectasis; the wheezing child; congenital anomalies of the respiratory tract.

PAE 542 A: Paediatric Respiratory Medicine/Paediatric Cardiology

- Congenital anomalies of the respiratory-tract; Respiratory system evaluation
- Upper respiratory infections
- Low respiratory infections
- Asthma in childhood
- Pulmonary tuberculosis/extra-pulmonary tuberculosis
- Evaluation of the CVS in children
- Congenital heart disease-acyanotic
- Congenital heart disease-cyanotic
- Acquired heart disease

PAE 542 B: Paediatric Infectious Disease and Genetics

- Measles and other childhood exanthemas
- Whooping cough
- Poliomyelitis/Diphtheria
- Extra-pulmonary tuberculosis
- Osteomyelitis and septic arthritis
- Paediatric HIV/AIDS
- Malaria
- Intestinal parasites
- Tuberculosis
- Salmonellosis
- Giardiasis
- Schistosomiasis
- Molecular basis for genetic disease
- Autosomal recessive inheritance
- X-linked recessive inheritance
- X-linked recessive inheritance
- Chromosomal abnormalities
- Genetic Counseling

PAE 543: Nutrition, Growth and Development

- Infant nutrition/complementary feeding practices
- Factors affecting growth and development
- Causes of failure to thrive

- Growth monitoring: Nutrition assessment/anthropometry
- Protein energy malnutrition.

PAE 544: Nephrology/Paediatric Gastroenterology

Development and structure anomalies of the UGS

- UTI
- Glomerulonephritis
- Nephritic syndrome
- Acute renal failure in childhood
- Chronic renal failure
- Diarrhea diseases in children
- Fluid and electrolyte imbalance/therapy
- Jaundice in childhood/Hepatitis in childhood
- Abdominal pain in childhood
- Mal-absorption
- GIT Bleeding
- Intestinal parasite

PAE 545: Child Health and Primary Care

- Organization of integrated child health services/PHC.
- Child survival strategies/NPI
- Problems of the girl child
- Rights of the child labour and abuse
- Principles of genetic/chromosomal anomalies
- Congenital anomalies
- Prenatal diagnosis and genetic counseling
- Infants of mothers with vertically transmissible disease
- Peculiarities of therapeutics in the newborn
- Gastrointestinal bleeding
- Hypoglycemia
- Management of pain in childhood
- Computers in paediatrics and child health and basic research methodologies in paediatrics.
- Miscellaneous

Accident and poisoning

- Bites and stings
- Kerosene ingestion
- Household accidents-burns
- Drug poisoning (salicylate, barbiturate, insecticide poisoning etc)
- Psychosocial problems in paediatrics

- Emergency paediatrics

PAE 546: Endocrine and Metabolic Diseases Of Children

- Hypothyroidism
- Hyperthyroidism
- Childhood diabetes mellitus
- Normal pubertal development
- Adolescence and its problems
- Precocious and delayed puberty
- Ambiguous genitalia
- Vitamin D metabolism/rickets
- Inborn errors of metabolism.

PAE 547: Prenatology, Neonatology and Genetics

- Introduction to prenatalology newborn/examination/reflexes
- Birth weight and gestational age assessment
- Principles of thermoregulation in the newborn (including shivering, thermogenesis, the incubator and kangaroo mother care)

LBW/SGA/Prematurity

- Definition, classification (by weight and maturity)
- Determinates of LBW, prevalence of LBW
- Common problems of prematurity/SGA
- Feeding issues
- Identification/screening for LBW

Prenatal Asphyxia

- Apgar scores
- Definition of perinatal asphyxia
- Pathophysiology
- Etiology
- Consequences of birth asphyxia (HIE, PIVH, NEC, Cardiac, Renal, Skin, Lungs and MAS)
- Long-term complications (cerebral palsy, mental retardation, learning disorders)
- Prevention – delivery room resuscitation

Neonatal Jaundice

- Classification (conjugated and unconjugated hyperbilirubinaemia)
- Etiology
- Concept of physiological
- Kernicterus

- Management with phototherapy
- Drugs (phenobarbitone, metalloporphyrins) eby
- Hydration
- EBT (indications, procedure, complications, post EBT care)
- Complications of jaundice

Haemorrhagic Disorders in The Newborn

- (including role of vitamin K in blood clotting factor synthesis, classification of HDN early, classical, late)

Common Conditions in The Newborn

- Pathogenesis
- Clinical features
- Severity score
- Treatment
- Prognosis
- Prevention (immunization of mother, delivery procedure and care of the newborn, neonatal seizures)

Respiratory Problems in The Newborn

- Apnoea-primary, Secondary, Apnoea of prematurity, other causes of Apnoea
- Resuscitation
- RDS-Pathology/Pathophysiology
- Clinical features
- Diagnosis features
- Differential diagnosis
- Management

Neonatology

Students spend some time (usually 1-2 weeks) in the newborn unit to acquaint themselves with normal newborns, the problems of the newborn infant and their prevention.

They also spend one week each in special baby unit.

- Normal newborn
- Preterm, small-for-date and post term baby
- Jaundice in the newborn
- Hemorrhagic disease in the newborn
- Respiratory problems in the newborn
- Neonatal infection: Sepsis, Meningitis, Tetanus

PAE 548: Neurology/Disease of Muscles and Bones

- Acute CNS infections
- Hydrocephalus and Microcephaly
- Convulsion in infancy and childhood
- The unconscious child
- Cerebral palsy
- Mental sub normality
- CNS tumours
- Osteomyelitis
- Pyomyositis
- Progressive muscle disease.

PAE 549A: Junior Posting (8 Weeks)

The junior posting is designed to introduce the students to the spectrum of disease in Paediatrics and to develop skills of identifying problems in the child. As a result, all the formal lectures are given during this period in addition to other methods of teaching. It is also designed to develop their clinical skills hence; they are expected to clerk and examine patients as well as join their various consultants during call.

PAE 549 B: Senior Posting (8 Weeks)

In the senior posting, the student is expected to further develop skills of analyzing clinical problems of the child and developing plans of action. At this stage, formal lectures cease and there is emphasis on bedside teaching and small group discussions. Students participate in small formal departmental programmes such as daily post call review meetings, mortality meeting and seminars.

DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY

The objectives of the department of Obstetrics and Gynaecology among others are the provision of appropriate knowledge, skills and attitudes needed for the recognition of the principles and practice of Obstetrics and Gynaecology and be able to:

- Examine clinically all gynaecological and obstetrics cases
- Describe common gynaecological diseases that affect female genital system;
- Manage common gynaecological conditions;
- Understand the principles and practice of ante-natal care
- Identify high risks obstetrics problems
- Manage normal and abnormal deliveries etc.

COURSE DESCRIPTION

OBG 531: Anatomy and Physiology of Female Reproductive System

Anatomy of female genital tract and the pelvic floor, puberty, menstrual cycles, variations in menstrual cycle, include dysfunctional uterine bleeding. Development of the female genital tract: sex determination, intersexuality, congenital abnormalities, Tubo-ovarian infection, acute and chronic. Over-fertility and family planning.

Infertility – Male and Female. Menopause. Utero- Vaginal prolapse. Control of Micturition: incontinence of urine, genuine stress incontinence detrusor instability, overflow incontinence. Vesico - Vaginal fistula. Retention of urine. Third degree perineal tear and recto-Vaginal fistula. The use of hormones in gynaecological practice. Screening for gynaecological malignancies.

Carcinoma of cervix. Benign and malignant disease of the uterus: uterine fibroid, adenomyosis, carcinoma of the endometrium. Sexually transmitted disease. Chronic vulva diseases. Endoscopy in gynaecological practice.

OBG 533: Obstetrics Clinics (3 Units)

Weight gain in pregnancy. Circulatory and respiratory changes in pregnancy. Renal and gastrointestinal changes in pregnancy. Metabolic changes in pregnancy. Immunology of reproduction. The placenta, amniotic fluid. The physiology of lactation. Anaemia in pregnancy: aetiology, malaria and complications, prophylaxis and treatment including blood transfusion.

Haemoglobinopathies. Hypertensive and chronic renal diseases. Acute renal failure in Obstetrics and Gynaecology. Infections – meningitis, Acute Pyelonephritis, tuberculosis, diarrheal diseases, Tetanus. Bleeding in early pregnancy. Ante-partum haemorrhage: placenta praevia; Ante-partum haemorrhage, abruption placenta; coagulation disorders obstetrics. Factors interfering with fetal oxygenation; maternal

and placenta; intra- uterine growth restriction; postmaturity. Assessment of fetal well-being and placenta function pregnancy and labour; identification of fetus at risk. Abdominal pain in pregnancy.

OBG 535: Pregnancy, Labour and Puerperium

Physiology and normal conduct of labour. Uterine action; normal and abnormal; the use of partogram in early detection of abnormal labour. Trial of labour; management of prolonged labour: Causes, diagnosis, principles of management. Rupture of the uterus. Breech delivery: conduct and hazards. Twin pregnancy. Management of twin delivery. The retain second twin.

The epidemiology of prematurity and the conduct of premature labour. Induction of labour. Prevention and treatment of postpartum haemorrhage. The use of ergometrine and other oxytocic agents. Management of oblique and transverse lies. Prolapse of the umbilical cord. Puerperal morbidity – causes investigations and control. Maternal mortality. Biological and social factors in Obstetrics- age, parity, stature, smoking, ethnic factor etc. physiology of puerperium including lactation. Postnatal examination. Conduct of labour in the presence of maternal medical diseases – haemoglobinopathy, anaemia, heart disease, diabetes mellitus, chronic chest disease and liver failure, blood transfusion in obstetrics. Organization of maternity services for a community. Radiology in obstetrics and gynaecology. Caesarean section. Method of pain relief in labour. Prenatal and post-partum detection of congenital abnormalities of the new born. The asphyxiated infant, resuscitation and management. Internal birth injuries.

OBG 537: Special Gynaecology and Obstetrics Clinic

Approach to the gynaecological patient in the clinic. Symptoms and clinical signs in gynaecology, history taking in gynaecology. General physical examination. Pelvic examination. Clinic base procedures – pap smears, Vaginal swabs, cryosurgery, transabdominal and transvaginal ultrasonography, diagnostic hysteroscopy, colposcopy, hysterosalpingography.

Layout of the antenatal clinic. Approach to the obstetric patient in the antenatal clinic. Health education of pregnant women.

Registration/booking of the pregnant women. History taking in the pregnant women. General physical examination of the pregnant uterus and its contents. Routine laboratory investigations. Clinical pelvimetry. The postnatal clinic.

OBG 539: Special Topics in Obstetrics and Gynaecology

Sexual History- Taking: effective communication technique, barriers to effective communication, patient – patient centered interviewing, history taking skills, Patient education: principle of effective patient education, patient motivation and behavioral change. Patient counseling, informed consent options in counseling; decision making and managing emotions.

Adolescent Sexual and Reproductive Health: puberty and abnormalities, adolescent behavior in Nigeria. Initiation of sexual activity, unplanned pregnancy, sexual violence and abuse. Harmful traditional practice –female genital mutilation, puberty initiation rites, male child preference, voluntary / forced early marriage, sexuality education (including courtship and marriage preparation). Adolescent friendly services. Consequence of teenage pregnancy.

Safe Motherhood: Include physiology and disorder of pregnancy; objective and conduct of antenatal Care: normal and abnormal labour and care: pain control in labour: maternal morbidity and maternity; Evidence base -emergency Obstetrics Care; postnatal Care; prenatal mortality: resuscitation and care of the newborn; Exclusive Breastfeeding; Immunization.

Family Planning: including History, objectives, benefits and conduct of family planning; counseling Technique; choosing a contraceptive – Effectiveness, safety and other considerations: traditional natural methods; barrier and Hormonal methods; intrauterine devices; emergency contraception; sterilization; and menstrual regulation. Reproductive health of the elderly including menopause.

Abortion and Complication: include definition of abortion, causes, types clinical features, diagnosis, complications and treatment. Medical and surgical methods of abortion. The provisions of criminal and penal codes on abortion. The abortion law, its defects and consequences. Adoption and fostering. Management of complications of unsafe abortion. Post abortion care: emergency treatment of incomplete abortion, including use of manual vacuum aspiration; post abortion family planning and linkage with other reproductive health services.

Infertility Management: Including epidemiology, causes and prevention. Investigation and treatment of infertility, frigidity and erectile dysfunction.

Sexually Transmitted Infections: Including Epidemiology, pathogenesis, clinical features, diagnosis prevention and control, gonorrhea, Chancroid, Chlamydiae, syphilis, Trichomonas, gardnerella, herpes genitalis, human papilloma virus, pelvic inflammatory disease and pubic lice. STIs- contact management, syndromic management.

HIV/AIDS: Including epidemiology, pathogenesis, clinical features, diagnosis, prevention and control, HIV and pregnancy, prevention of mother-to-child transmission (vertical transmission) management and care (including home based care).

Screening for Cancers: Epidemiology, causes, features, prevention and treatment of cancers of: vulva, vagina, cervix, uterine body, ovary and breast, self-examination of

breast. Cervical cytology, colposcopy. Visual inspection of acetic acid-smeared cervix (VIA) and visual inspection of Acetic acid-smeared cervix under magnification (VIAM).

DEPARTMENT OF SURGERY

Course Objectives

During this period, the student will be methodically exposed to acquire knowledge and relevant basic skills in the diagnosis, investigation and treatment diseases in the specialties of Anaesthesia, Ophthalmology and Otorhinolaryngology.

For a period of eight weeks, he will perform duties as a “Junior House Surgeon” in the care of patients in the wards and as a “Junior Casually Officer” in the reception and care of surgical emergencies.

It is a period of the student to consolidate fully the knowledge and skill he has acquired in surgical training to enable him emerge into the profession as a confident and competent house surgeon.

At the end of the posting the students are given tests in theory, MCQ, Clinical and Viva Voce.

COURSE DESCRIPTION

SUG 451: Principles of Surgery

The development of surgery; scope and history of surgery; surgical anatomy, symptoms and physical signs; paediatric signs and symptoms; congenital surgery disorders.

Homeostasis: Bodily changes in trauma and surgery; Shock: Causes and management of circulatory collapse; fluid and electrolyte balance in surgical patients principles of pre-operative preparation of the surgical patient; wound healing:

Biological and clinical features; blood transfusion and disorders of surgical bleeding; metabolism and nutrition in surgery patients; fever in surgical patients; principles of operative surgery: antisepsis, techniques, sutures and drains; surgical infections and choice of antibiotics; surgical complications: principles of post-operative management; principles of paediatrics surgery.

SUG 452: Gastroenterology and Endocrinology

Hernias; Trauma: Management of the acutely injured patient surgical diseases of the breast; the thyroid gland; scrotal swelling, patent processus vaginalis; surgical diseases of the stomach and duodenum; hepatobiliary disorders; pancreatic disorders; surgery of the spleen; neoplasms in children.

SUG 454: Basic Surgical Skills

Cut down venostomy and cannulation; setting up iv: Drip and management of i.v infusions; Insertion of lacerations; Incision and drainage of superficial abscesses; preparation of patients for clonic and anorectal operation; establishment, management and removal of chest tubes; -aspiration of fluid from the pleural space; aspiration of

fluid from the pericardial space; application and removal of P.O.P cast; application of temporary splints; making an electro-cardiographic recording (ECG recording); endotracheal intubation; aspiration of fluid from joint spaces; Intra-articular instillation and injections; electromyography; tracheal aspiration; laryngoscopy; goniometry.

SUG 456: Junior Clinical Posting (8 Weeks)

This is a sequential follow – up of the previous training in Anatomy, Physiology and Biochemistry.

SUG 551: Urological Surgery

Urological anatomy and physiology; history and physical examination in urology; diagnostic procedure and instrumentation in urology; congenital anomalies of the Genito – urinary system; genitor – urinary tract trauma; surgical aspects of urinary schistosomiasis; urinary tract infection; urinary tract obstructions: renal stones; paediatric urology; genito- urinary neoplasm; renal failure; congenital anomalies of the small intestine.

SUG 552: Traumatology

Traumatology; surgical management of the severely injured patient; running an Accident and Emergency Department; resuscitation including cardio Pulmonary Resuscitation.

SUG 553: Further Surgical Skills

Tuberculin test; ultrasonography; bone marrow aspiration; IVP; gastric intubation and lavage; gastroscopy; liver biopsy; abdominal paracentesis; proctoscopy; sigmoidoscopy; bladder catheterisation; renal biopsy, lumbar puncture; peritoneal haemodialysis; excision biopsy of simple lumps.

SUG 554: Intermediate Clinical Surgery Posting (S2)

To consolidate the knowledge which the student had obtained in the course of the Junior Surgery posting and simultaneously, to enhance his skill in the correlative application of pathology, clinical and investigative diagnosis in the treatment of surgical diseases.

SUG 650: Posting (S3) Major Surgical Specialties

This posting is designed to enable the student absorb the biological concepts as it is applicable to clinical management of surgical diseases in the sub-specialties of Orthopaedic Surgery, plastic and reconstructive surgery. Thoracic and vascular surgery, as well as in Neurosurgery.

SUG 651: Clinical Anaesthesiology

Pre-operative assessment and pre-medication; classification of anaesthetic techniques; anaesthetic technique: General anaesthesia, inhalational and intravenous methods; anaesthetic techniques: principles and uses of anaesthetic equipment and systems; choice of anaesthetic method and technique; post-operative management and intensive care; cardio-pulmonary arrest and resuscitation.

SUG 652: Orthopaedic Surgery

Fractures and dislocation; infections of bones and joint; bone tumors; congenital disorders of the musculo- skeletal system; rheumatic disorder of the musculo skeletal system; amputation and limb substitution; replantation of the extremities; the hand; infections of the musculo-skeletal system in the tropics.

SUG 653: Otorhinolaryngology (ENT)

The nose: symptoms, deformities, trauma and disease of the vestibule; disease of the nasal cavity and nasal septum; applied anatomy and physiology of the nasal accessory sinuses, sinusitis; mucocoele, neoplasm, trauma and abscess of the sinuses; adenoids and tonsils – diseases and surgery; acute and chronic pharyngeal disorders, Neoplasms of the pharynx; anatomy and physiology of the larynx, acute and chronic disorders of larynx and neoplasms; Disorders: Neoplasmas and neuroses; tracheostomy; The Ear: Applied anatomy and physiology; diseases of the external and middle, complications of otitis media ear; operations of the mastoid; antibiotics in ENT infections; congenital disorders in rhinolaryngology.

SUG 654: Thoracic and Vascular Surgery

Disorders of the Lymphatic system; disorders of veins and Arteries, and the heart; pulmonary embolism; thrombo-oblitrative disease of the Aorta and its branches; surgical disorders of the lungs, pleura and chest wall; thoracic trauma; lung abscess: Bronchiectasis and Emphysema; cardiac surgery and cardiac catheterization; cardio-respiratory arrest: prevention, diagnosis and management; congenital anomalies of the heart and great vessels.

SUG 655: Ophthalmology

Applied anatomy and physiology of the eye, ocular symptoms and signs; Injuries of the Eye: foreign bodies, lacerations, contusions, burns; orbit, cellulitis, cavernous sinus thrombus, exophthalmia; lesion of the eyelids and cornea; cataract; glaucoma strabismus; the retina: Various disorders including retinal detachment; optic nerve disorders; errors of refraction.

SUG 656: Plastic and Reconstructive Surgery

Diagnosis and management of burns; pathological processes of the Epidermis; malignant tumours of fibrous tissue; cancer of the skin; superficial lumps; principles of skin grafting and skin transposition.

SUG 657: Minor Surgical Specialties (Senior Surgery (S3) Posting)

During this period, the student will be methodically exposed to acquire knowledge and relevant basic skills in the diagnosis investigation and treatment diseases in the specialties of Anaesthesia, Ophthalmology and Otorhinolaryngology.

For a period of eight weeks, he will perform duties as a “Junior House Surgeon” in the care of patients in the wards and as a “Junior Casually Officer” in the reception and care of surgical emergencies.

It is a period of the student to consolidate fully the knowledge and skill he has acquired in surgical training to enable him emerge into the profession as a confident and competent house surgeon.

SUG 658: Neurosurgery

Diagnostic techniques in neuro-surgery; spontaneous intracranial haemorrhage; cranio- cerebral trauma; peripheral nerve injury; congenital disorders in neuro-surgery; neuro surgery relief of pain; neuro-surgical treatment of epilepsy.

DEPARTMENT OF INTERNAL MEDICINE

The objective of Internal Medicine is to train students in all spheres of internal medicine with stress on local medical problems and to arm medical students with standard clinical methods in examining patients and at same time be able to recognize certain diseases etc.

COURSE DESCRIPTION

MED 412: Introduction to Clinical Medicine

Basic clinical skills and singles clinical disorders; Elicitation of basic physical signs; techniques and general approach to patient; tutorials on elementary clinical Medicine; introduction to various health workers and various functions with clear emphasis on where the medical student fits in.

MED 420A: (M₁ S₁) Posting

1. Students should know the components and value of complete medical history taking.
2. Students should acquire the ability to elicit such history after appropriate communication with patients.
3. Students should acquire the ability to present such history in acceptable, fluent and chronological order to colleagues.
4. Students should exhibit appropriate comportment in the wards and maintain proper relationship with patients, nursing staffs etc.
5. Students should acquire ability to formulate a patient's problem list.
6. Students should be able to adapt appropriate communication strategies to specific clinical situations, settings, language and culture.

History taking is an art, and when well accomplished is capable of yielding the diagnosis in about 80% of the cases. When taken haphazardly, it is capable of misleading the doctor. All history is taken in strict confidence and a doctor can be subjected to legal action of divulging information obtained in the course of his duties.

MED 420B: (M₂ S₂) Posting

- a. The first week of this posting will be spent on consolidating knowledge acquired during M1 and assessment of M11 work.
- b. Basic physical examination. Clinical examination is a disciplined and systematic exercise designed to reveal probable diagnosis. It is carried out in an orderly fashion.

The objectives are to endow the students with:

1. Ability to elicit and interpret clinical signs
2. Ability to interpret absence of signs
3. Ability to make provisional diagnosis with its differentials in a sequential order of importance with regard to history and signs
4. Ability to determine basic relevant investigations and their interpretations and values.
5. Ability to carry outside laboratory procedures: Urinalysis, stool analysis, blood sugar estimation, blood film/smear and staining (Haematoxylin and eosin, Giemsa, ZN).

MED 421: Cardiology I

Physiological basis of heart function

Physiology to pathophysiology

Clinical anatomy & physiology of the heart & blood vessels.

Clinical anatomy of the Heart and Blood Vessels: - The student is expected to know the anatomy of the heart, its blood supply, the relationship with the great vessels, embryology of the heart, and the distribution of the blood vessels in the body.

Normal and Disordered Physiology: - This embraces the knowledge about cardiac contractility, and the various adaptive responses of the heart.

Review of Cardiac Pharmacology: - The student should be conversant with the pharmacology of the drugs used in cardiology, their side effects, contraindications, and significant drug interactions.

Symptoms and signs of cardiac diseases: - The student should be able to recognize and explore the various symptoms and signs of cardiac disease, and interpret them.

Cardiac Investigations: - This embraces knowledge of the various cardiac investigations: their indications, and their interpretation especially echocardiography and catheterization, ECG, Stress test, x-ray, and biochemical tests.

Congenital Heart Disease: - The student should be able to recognize common congenital heart diseases such as ASD, VSD, TOF, PDA and Dextrocardia.

Rheumatic fever and Rheumatic Heart Disease: - Knowledge of Aetiology, pathogenesis, clinical features, complications, treatment, and prevention of rheumatic fever and rheumatic heart disease are required.

MED 422: Cardiology II

Non-Rheumatic Acquired Valvular Heart Disease: - Valvular damage from degeneration, connective tissue diseases, EMF, etc should be taught.

Heart Failure: - The student should be conversant with various causes of heart failure, their clinical features, diagnosis and treatment.

Hypertension: - Aetiology, diagnosis, treatment and follow-up of systemic arterial hypertension should be taught in detail.

Endocarditis (Infective and Non-Infective):- The student should recognize endocarditis, confirm the diagnosis by appropriate means, and institute therapy.

Ischaemic Heart Disease: - knowledge of risk factors for ischaemic heart disease is essential. They should be asked to diagnose and give first aid treatment in case of ischaemic heart disease. Preventive modalities should be emphasized.

Disease of the Pericardium: - The student should be able to recognize cases of Pericarditis with or without effusion/constriction and measures for resuscitative treatment.

Cardiomyopathies (special and non-specific):- Knowledge of dilated, Hypertrophic and restrictive Cardiomyopathies, is essential. Secondary causes of heart muscle damage should also be recognized.

Peripheral Vascular Diseases: - Occlusion, aneurysms, haemangiomas: causes, diagnosis and treatment.

Rhythmic Disturbances: - Recognition of tachyarrhythmias, Brady-arrhythmias, and conduction disturbances.

Cardiac Tumors: - Clinical recognition of confirmation of diagnosis, available treatment modalities.

Cardiopulmonary Resuscitation: - Knowledge of what to do in case of sudden cardiac collapse.

Thromboembolic Phenomena: - Risk factors, diagnosis, prevention, treatment and complications.

HIV and the Heart: Various heart diseases attributable to HIV

Diets and the Heart: Diet in the prevention and treatment of heart diseases.

MED 423: Neurology I

Neuroanatomy (Clinical/Functional Anatomy)

Skeleton	(a) Skull	}	in relation to Nervous system
	(b) Vertebrae		
Central Nervous System			
Brain	(a) Cerebrum	}	and the ventricles
	(b) Brain Stem		
	(c) Cerebellum		
Spinal Cord			
Meninges			
Peripheral Nerves			
Cranial and spinal nerves			
Motor efferent fibres	(a) Somatic		
	(b) Autonomic		

Neurone: (Nerve cell) and Nerve cell body

Groups. Nerve fibre and Nerve fibre bundles.

Blood supply to the central Nervous system

MED 424: Neurology II

Neurophysiology – Functional/Clinic Physiology

Cerebral Cortex; Cranial Nerves; Cerebellum; Motor system; Sensory system; Control of Bladder and Sexual Function

Neuromicrobiology

- (a) Infections: Meningitis, poliomyelitis, Tetanus;
Neurosyphilis, Rabies, Botulism
Miscellaneous Infection - Cerebral Malaria; Cysticercosis etc.
- (b) Brain Abscess
- (c) Related Tests with Blood, CSF and other specimens

Neuropathology

- (a) Normal cells and cellular pathology
- (b) Cerebral Oedema, Raised intracranial pressure and Herniation, and Hydrocephalus.

Cerebro vascular diseases.

(Vascular Disorders) – Ischaemia Infraction; Haemorrhage primary intra cerebral and cerebellar; Subarachnoid; Subdural and Extradural; Thrombosis – Cortical venous and sinus thrombosis.

Infections

Acute Meningitis; Neurosyphilis; Acute focal Suppurative infections; Chronic Bacterial Meningo – Encephalitis; Viral and Fungal Meningo – Encephalitis

Demyelination Disease

Degenerative disease – Cerebral cortex; Basal Ganglia and Brain Stem; Spino Cerebellar; Motor Neurone

Toxic and Acquired Metabolic Diseases: Neurocutaneous syndromes

Malformation and Developmental diseases: Prenatal Brain Injury surgery; Trauma; Tumours

MED 426: Respiratory Medicine

Developmental Anatomy and Physiology of the lungs

- Brief Embryology
- Clinical Anatomy
- Physiology
- Control of Respiration
- Neural Chemical
- Measurement of respiratory function/lung volume
- Function of the lungs.

The Pneumonia

- Definition
- Classification
- Clinical features
- Treatment

- Complication
- Prognostic factors

Pulmonary and Extra Pulmonary Tuberculosis

- Epidemiology
- Pathogenesis
- Clinical features
- Diagnosis and treatment
- Drug resistance in tuberculosis – causes and remedies

Asthma

- Epidemiology and Risk factors
- Clinical features, diagnosis and treatment
- The GINA guide line
- Acute severe asthma

Chronic Obstructive Air Way Disease

- Definition
- Epidemiology and Risk Factors
- Characteristic clinical features, laboratory finding in chronic bronchitis/emphysema
- Management

Chest Pain

- Differential Diagnosis
- Patient evaluation
- Treatment

Pulmonary Embolism

- Aetiology and Epidemiology
- Pathophysiology
- Clinical features

MED 427: Nephrology I

Anatomy of the Urinary System

- Embryology
- Gross Anatomy
- Vasculature
- Histology

Physiology of the Kidney

- The Nephron
- The counter current multiplier system
- Endocrine functions of the Kidney
- Acid base balance

Investigations in Nephrology

- Chemistry urinalysis, blood chemistry

- Microbiology
- Radiology x-rays: plain and contrast studies, ultrasound, computed tomography magnetic resonance imaging, radionuclide tests and Histology-kidney biopsy.

MED 428: Nephrology II

Acute Renal Failure

- Definition
- Pathophysiology
- Aetiology
- Clinical features and differential diagnosis
- Investigations
- Treatment including dialysis
- Complications
- Prevention

Chronic Renal Failure

- Definition
- Pathophysiology
- Aetiology
- Clinical features
- Investigations
- Treatment
- Complications
- Prevention

The Major Glomerulopathies

- Definition
- Classification
- Aetiology
- Clinical features
- Investigations
- Treatment
- Complications

The Nephrotic Syndrome

- Definition
- Classification
- Aetiology
- Clinical features
- Investigations
- Treatment
- Complications

Urinary Tract Infections

- Definition
- Pathophysiology
- Aetiology
- Clinical features
- Investigations
- Treatment
- Complications

Hereditary Tubular Disorders

- Autosomal dominant polycystic kidney disease
- Sickle cell nephropathy
- Medullary cystic disease
- Renal tubular acidosis

Nephrolithiasis

- Aetiology
- Clinical features
- Investigations
- Treatment
- Complications

Tumours of the Urinary Tract

- Renal cell carcinoma
- Miscellaneous tumors of the urinary tract
- Carcinoma of the bladder

Dialysis and Transportation

- Haemodialysis
- Peritoneal dialysis
- Indications
- Contraindications
- Transplantation

MED 429: TROPICAL MEDICINE I (1 Unit)**Introduction**

Epidemiology; General principles and basic Mechanism of Infection; Host Defenses and Susceptibility; Metabolic consequences; diagnosis and management
Bacterial Infections; Staphylococcal toxic diseases; Food poisoning; TSS; Scalded skin syndrome; Bullous impetigo; Staphylococcal Scarlet fever; Meningococcal; CSM; Clostridial; Tetanus; Botulism; Gas gangrene

MED 620A: M₃S₃ Posting (6 Weeks)

The first week of this posting will be spent on consolidating knowledge acquired during M2 and assessment of M2 work. In addition, students should acquire proficiency in:

1. Treatment rationale using evidence based and best practice principles
2. Knowledge of complications of disease and treatment.
3. Prevention of disease
4. More advanced investigations, for example, computerized tomography (CT), Magnetic Resonance Imaging (MRI) etc.
5. Procedures
 - (a) Performed by student; venipuncture, lumbar, electrocardiogram.
 - (b) Observed by student; liver biopsy, endoscopy, rectal biopsy, kidney biopsy, peritoneal tests, haemodialysis, spirometry, lung function tests, cardiac catheterization, electroencephalogram, muscle biopsy, electromyogram, skin biopsy, echocardiography.
6. Revisit the laboratory knowledge of ELISA, concept of endocrine tests.
7. Students should be able to act as assistant to House Officers.

MED 620B: M₄S₄ POSTING (6 WEEKS)

The first week of this posting will be spent on assessment of M3 work. The rest of the period will be spent on consolidating M3 work. The students should be able to act as assistant to House Officers and Resident Doctors.

MED 621: Tropical Medicine II

Infections due to *Bacillus anthracis* Anthrax; Cholera; Food poisoning; Pyrexia of unknown origin; typhoid fever; Septicaemia; Actinomycetis; Actinomycosis; Norcardiosis; Mycobacteria; Tuberculosis; Leprosy; *Spiriochaetes*; Syphilis; *Rickettsiae*; Typhus; Q-fever

MED 621: Gastroenterology I

Disease of the Oesophagus; an overview of the causes of Dysphagia, evaluation of a patient with dysphagia including investigations and treatment. Gastro-oesophageal reflux disease- aetiopathogenesis, complications and treatment. Causes of oesophagitis, including infective and non-infective causes.

Acute and Chronic pancreatitis: Aetiology factors, pathogenesis, clinical feature complications and treatment

MED 622: Gastroenterology II

Gastritis:

Classification, Aetiology, clinical presentation and treatment. Role of aetiological factors like *Helicobacter pylori*, nonsteroidal anti-inflammatory drugs, stress and immunologic mechanisms in gastritis.

Peptic Ulcer disease (PUD):

Current views on the aetiopathogenesis of peptic ulcer disease. Role of *Helicobacter pylori*, acid and pepsin. Pharmacotherapy of acid-peptic disease, including *Helicobacter pylori*, eradication regimes. Complications of peptic ulcer disease. Surgery in the management of PUD and complications of surgery.

Upper Gastrointestinal haemorrhage:

Aetiology, clinical presentation and management. Emphasis on the fact that this is one of the most common medical emergencies.

Inflammatory Bowel Conditions:

Detailed discussion of the aetiopathogenesis, clinical presentation and management of the common inflammatory conditions of the infective origin such as tuberculous enteritis, typhoid enteritis, Schistosomiasis, cholera and amoebic, colitis. Idiopathic inflammatory bowel diseases NAMELY: Crohn's disease and ulcerative colitis. Current views on aetiopathogenesis and management.

Amoebic Liver Disease:

Aetiology, clinical presentation, investigations and treatment.

Acute Hepatitis

Infective and non-infective causes including viruses, bacteria, fungi, drugs, alcohol etc. hepatotropic viruses (A,B,C,D,E,G.). Pathogenesis and natural history of the hepatitis caused by the hepatotropic viruses.

Chronic Hepatitis:

Current methods of classification. Aetiology and management. Newer treatments for chronic hepatitis of viral Aetiology. Alcoholic liver disease.

Hepatic Cirrhosis:

Aetiological and morphological classification. Compensated and decompensated cirrhosis. Clinical recognition and management of decompensated cirrhosis. Complications of cirrhosis.

Hepatic Encephalopathy/hepatic Failure:

Definition, pathogenesis clinical presentation and management. Common precipitating factors of encephalopathy.

Primary Liver Cell Carcinoma (PLCC):

Epidemiology of (PLCC). Aetiology factors e HBV, HCV, alcohol, cirrhosis, haemochromato etc. pathology of PLCC. The importance prevention. Vaccination against hepatitis B virus infection and monitoring of high risk persons cirrhosis.

MED 624: Endocrinology

The courses are designed to highlight the most important aspects of normal and abnormal endocrine functions. Aspects of normal and abnormal endocrine functions. The courses are taught to students through formal lectures, seminars, small group teachings in clinical postings and patient encounters in the wards and Clinics. Students are encouraged to ask questions and to actively participate in discussions. As much as possible cases real or simulated are used to highlight important aspects of the hormonal system.

In all cases, the fundamental principles of important aspects of the hormonal system are emphasized under the following.

Molecular basis of Hormone Action

- Diffusion actions
- Inter-reactions between different hormones and hormone receptors
- Mechanism of hormones synthesis, hormone transport, carrier molecules, inactivation, hormone receptors (membrane and nuclear receptors) metabolism of hormones.

Physiological Principles

- Regulation of hormone synthesis and secretion
- Regulation of receptor activities
- Feedback control

Pathophysiological principles of Excess and deficient Hormone secretion

- Clinical presentations and their variations
- Diagnoses
- Pharmacological principles of Drugs
- In diagnosis and treatment
- Indication and contraindications of drugs
- Side effects of the drugs

Endocrinology & Metabolism

- General principles of hormone action and manifestations of normal and abnormal hormonal action.
- Disorders of Growth and development
- Glucose homeostasis and diabetes mellitus
- Insulin synthesis, secretion and insulin receptors.
- Counter regulatory hormones
- Diabetes mellitus – classification, clinical presentation, diagnosis, acute and chronic complications, management.

Thyroid Disorders

- Physiology
- Hyper and hypo functions, graves diseases
- Thyroiditis
- Euthyroid goiter
- Iodine deficiency disorders

- Thyroid function tests and uses in diagnosis
- Management of different thyroid disorders

Hypothalamus and Pituitary Disorders

- Physiology
- Hyper and hypo function
- Bilateral adrenal hyperplasia

Adrenal Disorders

- Cushing's disease
- Addison's disease

Endocrine Hypertension

Disorder of the Neurohypophysis: Vasopressin-excess and deficiency states

Disorders of bone and mineral metabolism: Calcium and parathormone Action

Endocrine Tumours and Ectopic hormone production.

MED 625: Psychiatry

Course objectives

At the end of course, the student should be able to develop the skills for psychiatric examination, make diagnosis and prescribe treatment and other aspects of management of the psychiatrically ill.

Content

- Medical Psychology
- Introduction to Psychiatry
- History of Psychiatry
- History taking in Psychiatry
- Mental State Examination
- Psychopathology I
- Psychopathology II
- Depression and Management of Depressive disorders
- Mania and management of mania
- Schizophrenia I
- Schizophrenia II
- Post-partum psychosis
- Misuse of alcohol and the related illness
- The use of other substances and their management
- Psychopharmacology I
- Psychopharmacology II
- Somatization

- Other somatoform disorders, conversion disorders, hyperventilation tetany, panic disorder, effort syndrome
- Personality disorders
- Epilepsy and management of epilepsy
- Mental retardation
- Investigations in Psychiatry
- Transcultural Psychiatry
- Psychiatric emergencies and management
- Suicide, attempted suicide
- Delirium, dementia
- Defence mechanism
- Research methodology
- Psychosomatic illness
- Forensic psychiatry
- Sleep disorders
- Sexual disorders
- Childhood psychiatric disorders
- Psychotherapy
- Factitious disorders
- ECT
- Obsessive-compulsive disorder
- Uncommon psychiatric disorder
- Molecular biology in psychiatry
- Ethics in psychiatry
- Clinical psychology
- Basic computer science in psychiatry

MED 627: Dermatology/ Venerology /Musculoskeletal System

Fundamentals of Dermatology

- Normal anatomy and physiology of the skin; functions of the skin.
- Immunology of the skin, pathogenesis, diagnosis and treatment of common skin conditions. Terminologies used in describing skin rashes (descriptive morphology).
- Investigative procedures carried out for common cutaneous disorders

Dermatology / Venerology

Bacterial infection of the skin

- Staphylococcal infections: impetigo, folliculitis, Ecthyma, Furunculosis, Carbuncles, Scalded skin syndrome, Toxic shock.
- Streptococcal infections: Erysipelas, Cellulites, Necrotizing fascitis
- Diptheroids: Erythrasm, Trichomycosis.

- Spirochaetal infections: Syphilis, Yaws, Lyme disease
- Mycobacterial infection: Tuberculosis, Leprosy (Hansen's disease), other Mycobacterial infections such as Mycobacterial Ulcerans.

Viral Infections

Varicella, Herpes-zoster, Herpes simplex, viral warts, Molluscum contagiosum, Acquired Immuno Deficiency Syndrome (AIDS).

Infestations (parasitic diseases of the skin): Insect bites, popular urticaria, Scabies, Pediculosis, Jiggers, Bed bugs, Myiasis, Onchocerciasis, Filariasis; Larva migrans.

Eczemas/Dermatitis: Pathogenesis, clinical feature, investigations and complications of eczemas/dermatitis. Common patterns of eczemas such as irritant contact eczema. Allergic contact dermatitis, Atopic eczema, Seborrhoeic eczema, stasis eczema, discoid eczema, pompholyx, Asteototic eczema, Localized neurodermatitis, Napkin (diaper) dermatitis and Photo-dermatitis.

Pigmentary Disorders

Hypo pigmentation: Oculocutaneous Albinism, Piebaldism, vitiligo, post-inflammatory-pityriasis alba, sarcoidosis, eczema, psoriasis, lupus erythematosus; Halo nevus, idiopathic guttate hypomelanosis.

Hyper Pigmentation: Melasma, Freckles, Lentigines, Fixed drug eruption, café au lait macules, photosensitizing drugs, endocrine causes of hyper pigmentation, post-inflammatory-lichen planus, eczemas, systemic sclerosis, secondary syphilis, acanthosis Nigricans, Mastocytosis.

Papulo-squamous Disorders: Psoriasis, Lichen planus, Pityriasis rosea

Disorders of the Pilosebaceous Unit: Acne vulgaris, Rosacea, Hidradenitis suppurativa, Acne Keloidale nuchae.

Disorders of the Sweet Glands: Generalized and localized hyperhidrosis, Miliaria, Anhidrosis.

Disorders of the Hair and nails: Alopecia (localized and diffuse hair loss), Hirsutism, Hypertrichosis;

- Nail Disorders in systemic diseases-clubbing koilonychia.
- Beau lines; Nails changes in common dermatosis such as psoriasis, lichen planus, alopecia areata; Nail infections paronychia, dermatophyte infections; Onychogryphosis.

Genodermatosis: Neurofibromatosis, Tuberous sclerosis, Epidermolysis bullosa, Ehlers-Danlos Syndrome, pseudoxanthoma elasticum.

The Skin and Systemic Diseases:

- Skin and diabetes mellitus (necrobiosis lipoidica, granuloma annulare, diabetic dermopathy, neuropathic foot ulcers)
- Skin in renal disorders – (pruritis, pigmentation, half and half nails).

4. ADDITIONAL INFORMATION

Regulations Governing the Degree of Bachelor of Medicine (M.B) and Bachelor of Surgery (B.S) of the Madonna University, Nigeria.

1. The degrees of Bachelor of Medicine and Bachelor of Surgery (MB; BS) shall be the primary degrees in Medicine and Surgery in the Faculty of Medicine.
2. The curriculum for the degrees of Bachelor of Medicine shall normally extend for a period of six academic years for students admitted by University Matriculation Examination (UME) and five years for students admitted by direct entry.
3. To qualify for the degrees of Bachelor of Medicine and Bachelor of Surgery, candidates must spend the last three years in the Faculty of Medicine. The remaining period (of the curriculum) may be spent in any other university or medical school approved for the purpose by the Senate, on the recommendation of the Faculty Board of studies.
4. The examiners for the degrees shall be those approved by Senate
5. All candidates for the degrees of Bachelor of Medicine and Bachelor of Surgery shall be required to have satisfied the examiners in the several subjects of Five examinations titled respectively:
 - The First non-Professional Examination
 - The Second Professional Examination
 - The Third Professional Examination
 - The Fourth Professional Examination
 - The Fifth Professional Examination

Candidates shall also be required to have satisfied the examiners in the NUC and University General studies and other required courses in the university. All candidates shall normally take the non-Professional Examination at the ended of the 1st year, the Second Professional Examination after the 1st semester of the 3rd year, the Third Professional Examination at the end of the 4th year, the Fourth Professional Examination not less than 30 months after the second Professional Examination and the Fifth Professional Examination after a period of study not less than 36 months after passing the second Professional Examination.

The non- Professional Examination

1. The subjects of the non-professional examination (which shall be Guided by the general University Academic Regulations, shall include 50% (C) minimum pass in all the Science subjects and 40% (E) minimum pass in non-Science subjects
2. Candidates shall not be allowed to proceed with the courses in Anatomy, Physiology and Medical Biochemistry until they have passed or gained

exemption from the whole of the non-professional examination (all medical student from 100-level to 200 level MUST have no outstanding course).

3. Candidates should have passed all relevant General Studies (G.S.T.) Courses of 200 level before presenting themselves for the Third Professional Examination

Second Professional Examination

1. The subjects of the Second Professional Examination shall be:
 - a. Medical Anatomy
 - b. Medical Physiology and
 - c. Medical Biochemistry
2. The Main examination shall normally be held in April and the resit examination three months after in the same year. Candidates must present themselves for examination in all three subjects on the first occasion and those who have satisfied the examiners in the whole examination in April shall during the 2nd semester of the 3rd year of the course proceed to the Introductory Clinical courses and to courses in Pathological sciences and Pharmacology.
3.
 - a. Candidates who score less than 40% in all three subjects in first attempt shall be required to withdraw from the course.
 - b. Candidates who score more than 40% and less than 50% in two (2) or more subjects at first attempt shall be required to repeat the entire examination in 12 months after further instructions.
4. Candidates who fail in the resit examination shall be deemed to have failed the entire Second Professional Examination and shall be required, after further instructions in Anatomy, Physiology and Medical Biochemistry, to take the entire examination again the following year. Such candidates if successful shall be required to attend the introductory clinical course for a second time.
5. Candidates who fail to obtain full pass at the Second Professional Examination after three attempts or candidates who fail in two or more subjects in two successive attempts shall be required to withdraw from the courses leading to the ward of the degrees of MBBS.
6. Candidates who have pursued successfully courses of study in Anatomy, Physiology, Medical Biochemistry, in another institution approved by the Senate on the recommendation of the Faculty Board shall be exempted from such part of the course of studies leading to the Second Professional Examination or from the examination.
7. A distinction may be awarded in the individual subjects to candidates who have passed the whole of the Second Professional Examination at the first attempt. The names of candidates who have satisfied the examiners in the Second Professional Examination shall be published in alphabetical order.

The Third Professional Examination

The Main examination shall normally be held in June and the re-sit examinations in December of the same year. No candidate shall be allowed to sit for the third MB; BS examination, until he has passed the second MB; BS examination.

1. The subject of the Third Professional Examination shall be:
 - a. Pharmacology
 - b. Pathological Sciences (Chemical Pathology, Haematology/Immunology, Histopathology, Medical Microbiology).
2. Candidates shall present themselves for examination in both subjects at the same time on the first occasion.
3. Candidates who fail both subjects of the Third Professional Examination at first attempts shall stay back for year to repeat the courses and examination as a second attempt.
4. Candidates who fail in one subject shall present themselves for a re-sit examination in the subject in which they failed.
5. Candidates who in their 2nd attempt fail the one subject of the examination shall be required to stay back for further instructions and be re-examined in the subject referred after six months and shall not proceed with other postings. Candidates who in their third attempts make less than 45% shall be required to withdraw from the Faculty.
6. Normally, 3 (three) attempts shall be allowed for passing the third MB; BS degree examination. The 4th and final attempt shall be on the recommendation of the Faculty Board of Studies and approval by the Senate. This recommendation shall be based strictly on the candidate's score which shall not be below 45%.
7. A distinction may be awarded in the individual subjects to those candidates who have passed the whole of the third Professional Examination at the first attempt. The names of candidates who have satisfied the examiners in the Third Professional Examination shall be published in alphabetical order.

The Fourth Professional Examination

The Main examination shall normally be held in December and the re-sit examination three months after of the following year.

1. The subject of the Fourth Professional Examination shall be:
 - a. Paediatrics
 - b. Obstetrics and Gynaecology
2. Candidates shall present themselves for examination in all the subjects on the first occasion.
 - a. Candidates who fail to satisfy the examiners on either of the subjects shall present themselves for a re-sit or on a subsequent occasion for re-examination in the subject in which they failed.

- b. Candidates who fail in both subjects of the Fourth Professional examinations at first attempt shall stay back to repeat the courses and examination as second attempt.
3. No candidates shall be admitted into the Fourth Professional Examination until he/she has passed both subjects of the Third Professional Examination
4. A distinction may be awarded in the individual subjects to candidates who have passed the whole of the Fourth Professional Examination at the first attempt. The names of candidates who have satisfied the examiners shall be published in alphabetical order.
5. Normally three attempts are allowed for passing the Fourth MB; BS Examination. A Fourth and final attempt shall be on the recommendation of the Faculty Board and approval by Senate.

The Fifth Professional Examination

1. The subjects of the Fifth Professional Examination shall be:
 - a. Medicine, including Therapeutics, Psychological Medicine, Dermatology and Radiation Medicine.
 - b. Surgery, including Anesthesiology, Otolaryngology and Ophthalmology and
 - c. Community Medicine.
2. Candidates shall not be admitted to the Fifth Professional Examination until they have passed all the subjects of the Fourth Professional Examination.
3. Candidates shall present themselves for examination in all subjects on the first occasion. Candidates who fail to satisfy the examiners in any of these subjects shall present themselves on a subsequent occasion for re-examination in the subject or subjects in which they failed.
4. A distinction may be awarded in the individual subjects to candidates who have passed the whole of the Fifth Professional Examination at the first attempt. The names of candidates who have satisfied the examiners in the Fifth Professional Examination shall be published in alphabetical order.

General

1. Before presenting themselves for any Professional Examination candidates shall be required to have completed to the satisfaction of the department concerned, such period of approved practical/clinical work. A minimum of 75% attendance is mandatory.
2. In order to pass in any subject of the Fourth and Fifth Professional Examination, candidates must satisfy the examiners in the clinical part of the examination.
3. The minimum residential requirements for transfer students from other Universities for the award of the MB; BS (Nig.) shall normally be three years. There shall be no exemptions from the Third or Fourth or Fifth Professional Examinations.

4. Withdrawal from the courses leading to the award of the degrees of MB; BS on academic grounds in permanent.
5. In consonance with the procedure in all medical schools, and the regulation by the professional body the Nigerian Medical and Dental Council, the pass mark for all Professional MBBS. Degree Examinations is 50% (C).

5. CONDUCT AT EXAMINATION

Candidates for each examination are required to comply with the following regulations.

1. All candidates shall arrive at the designated examination hall 30 (thirty) minutes before the scheduled time.
2. No candidate shall enter the hall unless asked to do so by the invigilator.
3. When asked, a candidate shall enter the exam hall with:
 - a) Current identity card
 - b) Pen(s), Pencil(s)
 - c) Calculator (but not a programmable type)
 - d) Ruler and
 - e) Any other material (tables, graph paper, drawing sheet etc) that may be permitted by the chief invigilator.
4. If a candidate reports for an examination without his current identity card, he shall report to the Chief Invigilator with a recent passport photograph. The Chief Invigilator after authenticating the photograph shall fix it on the candidate's answer booklet. At the end of the examination, the script shall be forwarded to the University Senate Examination committee before whom the candidate reports for clearance within 2 (two) working days, with his current identity card. The passport shall be returned to the student and the script released for marking. If it is discovered however, that the person who wrote the examination is not the owner of the identity card, it becomes a case of impersonation.
5. No candidate shall have any other material in his possession, even a private letter while inside the exam hall.
6. The invigilators shall assign seats to candidates. A candidate shall neither choose a seat for himself nor refuse a seat assigned to him by the invigilator.
7. Where possible, no two candidates writing the same examination paper shall sit next to each other in the examination hall.
8. Any invigilator reserves the right to inspect caps, head ties, underwear and sun-glasses of the candidates.
9. No candidate shall be allowed to either enter the exam hall 30 (thirty) minutes after the examination has started or leave the hall within the first thirty minutes of the examination.

10. No candidate shall be permitted to borrow or lend any material such as ruler, calculator, pen, pencil, eraser, etc during an examination except with the express permission of the invigilator.
11. Candidates are not allowed to tear any paper from either the question papers or answer booklets for any purpose including rough work. Any such work must be done on the answer booklets and then cancelled. No rough work is permitted on the question paper, on the desk, palm or anywhere else.
12. No candidate shall leave his seat during an examination unless authorized by the invigilator.
13. Candidates wishing to draw the attention of the invigilators to any particular issue shall do so by raising their hands and not by rising from their seats, or by making sounds of any sort.
14. All candidates, within the first five (5) minutes of the examination shall write their registration number on both the question papers and the answer booklets. Nothing else, shall be written on the question paper.
15. No alteration or cancellation is allowed in the students' registration number. If any mistake is made, the chief invigilator shall be notified before any correction is made.
16. Candidates shall ensure that they enter the question number attempted in the appropriate columns on the front page of the newer scripts.
17. Every candidate shall sign the Students Examination Attendance Register at the start of each examination.
18. On submission of the answer script after the examination, each candidate shall sign off on the Students Examination Attendance Register. For the avoidance of doubt, every student is responsible for the proper return of his examination script to the invigilator in the examination hall.
19. Smoking, eating or drinking is prohibited in the examination hall.

6. EXAMINATION MISCONDUCT

Any departure by either staff or students from the laid down examination regulations constitutes examination misconduct for staff as well as for students in and outside the Examination hall.

6.1 Examination Misconduct Committed in the Hall

- i. Every alleged case of examination misconduct arising during an examination shall be recorded on the prescribed Examination Misconduct Report form filled in duplicate.
- ii. The Examination Misconduct Report Form shall be completed before the student involved is allowed to continue writing. The student's examination time shall not be extended.

- iii. An allegation of a case of examination misconduct shall not constitute enough grounds for a student not to be allowed to complete writing the examination except where his continued presence within the exam hall endangers peace and good order.
- iv. The chief invigilator shall package the completed Examination Misconduct Report Forms along with the relevant answer scripts and any supporting materials, in a separate envelope for the Chairman of the Faculty Examination Committee.
- v. The Chairman of the Faculty Examination Committee shall collect all cases of examination misconduct at the end of each examination, make a report of them, and promptly submit them to the University Senate Examination Misconduct Committee through the Dean of Faculty who may retain the duplicate copy (only) of each Examination Misconduct Report Form.
- vi. On no account shall a report on an alleged case of examination misconduct be delayed for more than one (1) working day in the custody of any forwarding officer.
- vii. The University Senate Disciplinary Committee handles also all Examination Misconduct cases.

6.2 Examination Misconduct outside the Hall

Any suspected case of examination misconduct detected outside the examination hall shall be promptly reported in writing through the Head of Department to the Dean of Faculty who shall forward the case to the Chairman of the University Senate Examination Misconduct Committee within one (1) working day of the receipt of the report. The reporting officer shall send a copy of the report to the Chairman of the Faculty Examination Committee.

6.3 Penalties for Examination Misconduct by Students

Here are some misconducts with corresponding penalties as approved by Senate. The list is not exhaustive and Senate reserves the right to attend to it from time to time.

A) *EXPULSION FROM THE UNIVERSITY:*

Misconduct

- i. Impersonation (for both the impersonator and impersonated). However, where the impersonator is not a student of Madonna University he/she shall be handed over to the Police. And if a student of the University impersonates anyone outside the University, he/she shall be expelled from the University.
- ii. Found with unauthorized answer scripts or written material in the examination hall.
- iii. Refusal to hand over suspected offending material(s).
- iv. Destruction of suspected offending material(s).
- v. Assaulting or fighting an invigilator or any other examination officer

B) REPEAT THE YEAR

Misconduct

- i.* Failure to return an answer script after the examination.
- ii.* Collaborative copying.
- iii.* Exchanging answer scripts or written materials in the examination.
- iv.* Tendering of any unauthentic document relating to exam.
- v.* Refusal to sign the examination misconduct form.
- vi.* Smuggling of question paper out of the exam hall.

C) AWARD 'F'

Misconduct

- i.* Unruly behavior to the invigilator or any other exam officer.
- ii.* Refusal to sign the Examination Misconduct Form when asked to do so.
- iii.* Conviction in two (2) or more misconducts in (D) below.

D) WARNING

Misconduct

- i.* Writing before the start of an examination.
- ii.* Writing after the call for stop of examination.
- iii.* Writing things other than the registration number on the question paper provided and none of the misconducts in (a)ii above is committed.
- iv.* Talking to another student during an exam.
- v.* Looking into another student's answer script.
- vi.* Borrowing or lending any material in the examination hall.

6.4 Petitions on Examinations

Any student who feels victimized by any lecturer or an invigilator during examination should report immediately to the Vice Chancellor for proper investigation.

6.5 Staff Petition on Examinations

Every academic staff has the right to petition the Vice-Chancellor through the Head of Department and the Dean of his Faculty on any perceived unfair treatment/bad handling in connection with any aspect of the examinations in this University and advance copy shall be dispatched to the Vice- Chancellor.

- i.* The Head of Department shall within five (5) working days of its receipt submit the petition to the Vice-Chancellor.
- ii.* The Vice-Chancellor shall endeavour to dispose of the matter in the shortest possible time in order not to delay the publication of the students' results.

7. EXTERNAL EXAMINERS

7.1 Introduction

The external Examiner performs a most important quality control function in the University's examination process.

- i.* The External Examiner ensures that the University's avowed academic standards are duly reflected in the quality of question papers, the marking schemes, and students' projects. He/she shall submit an independent report to the Vice-Chancellor at the end of each external examination exercise.
- ii.* The External Examiner shall be a senior academic of a rank not below a senior lecturer and shall be external to the University. If in industry or in professional practice, he shall have attained such a senior academic rank prior to leaving University service. In any event, he/she shall possess evidence of academic currency in his field.
- iii.* The External Examiner's term of appointment shall be year by year for a maximum of three (3) years, after which he shall not be eligible for appointment until a period of three (3) years has elapsed from the end of his/her last appointment unless otherwise authorized by senate.