WESLEY UNIVERSITY ONDO

COLLEGE OF MEDICAL SCIENCES

PROPOSED PROSPECTUS

UNDERGRADUATE DEGREE PROGRAMMES

2023-2026

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GENERAL INFORMATION

MISSION OF UNIVERSITY:

Wesley University Ondo, Ondo State Nigeria is dedicated to the training of its students to become professionally competent and confident graduates with exquisite dexterity. It provides enabling environment for effective teaching and research in cutting-edge disciplines of all human endeavours for sustainable development. Consequently, the curricular involve intensive teaching and extensive practical training in innovation technology. The University is faith-based and thus passionate about instilling moral regeneration and godly character through Christian faith into all students. The research objectives are also made to be relevant to the needs of industries that will ensure prompt delivery of well-tested and technically optimized protocols to sensitized and confident graduates; the training of self-reliant and competent graduates capable of working on their own instead of the current dependence on government employment constitute the focal points of the University.

Grading System

The University shall ensure the use of common assessment scale and grading system for all courses taught throughout the University. The grading system shall be as indicated in the table below:

Percentage Scores	**Letter Grade**	**Quality Point**	**Level of Achievement**
70 – 100	A	5	Excellent
60 – 69	B	4	Very good
50 – 59	C	3	Good
45 – 49	D	2	Satisfactory
40 – 44	E	1	Fair
0 - 39	F	0	Fail

Cumulative grade Point Average (CGPA) which is an important assessment parameter is used to determine the level of the final pass grade obtained by a student in all programmes in the university as follows:

Percentage Scores	**Letter Grade**
4.50 – 5.00	1st Class Honours
3.50 – 4.49	2nd Class Honours Upper Division
2.40 – 3.49	2nd Class Honours Lower Division
1.50 – 2.39	3rd Class Honours

Eligibility to write Examination

i. Only candidates who have registered for courses are eligible to take the Semester examinations.

ii. In order to qualify to sit for an examination, a student must have attended a minimum of 70% of the lectures.

i. To be qualified to take an examination, a student must have paid 100% of the prescribed fees at the beginning of the First Semester during the registration period. Any student that is unable to make full payment at the prescribed period must seek the approval of the Registrar for part-payment of the fees which may not be less than 50% of prescribed fees. Half payment should be made before the end of the period for late registration for the First Semester while full payment should be made before the end of registration for the Second Semester.

3.6 Academic Standing

3.6.1 Good Academic Standing

To be in good standing, a student must maintain a cumulative grade-point average (CGPA) of not less than 1.00 at the end of any session during his/her study in the University.

3.6.2 Probation

A student whose CGPA is below 1.00 at the end of a particular semester of study, goes on probation the following semester.

3.6.3 Withdrawal

A student would be required to withdraw from the University if:

(i) He/she maintains a Cumulative Grade Point Average (CGPA) that is **Below** 1.00 for two consecutive semesters.

(ii) He/she has spent the maximum period of study allowed for his/her programme of study and still has one or more courses outstanding.

3.7 Termination of Studentship

A student may have his/her studentship terminated and be required to withdraw from the University if he/she fails to register for the required minimum number of courses/units of instruction for two consecutive semesters without approval.

3.8 Semester Examination

Each course shall normally be completed and examined at the end of each semester in which it is offered. The examination shall be conducted as prescribed by Senate.

3.9 Dissatisfaction with Examination Result

i. A student who is dissatisfied with the result of an examination affecting him/her may request for a review by submission of an application to the Senate through the Principal Assistant Registrar (Academic) of the university within three (3) weeks of release of the said result.

ii. The Senate of the university has the full prerogative to, or not to, effect any amendment of the said result after the cross examination of it.

ii. Any student with frivolous, ill motivated or speculative complaint(s) on result(s) shall be sanctioned.

4.00 Transfer

Any student who seeks transfer from the university to another is free to do so. Request for transcript for this and any other relevant purpose should be directed to the Admission officer on fulfillment of every necessary requirement.

4.0 EXAMINATION REGULATIONS AND GUIDELINES

4.1 Appointment of Examiners

ii. University examiners for degree programmes shall be appointed by the Senate on the recommendation of the appropriate College Board through the Committee Deans and Directors.

iii. University examiners shall be appointed annually at the first meeting of Senate provided that subsequent additional appointments may be processed through the Committee of Deans and Directors.

4.2. Control of University examinations

i. The Senate shall have control and general direction of all university examinations and shall determine any matter relating to the organization of examinations.

ii. The Committee of Deans and Directors shall be responsible for the details of organization and administrative arrangements for university examinations.

iii. University examinations shall be conducted by Departmental Boards of Examiners appointed at the first meeting of Senate on the recommendation of the College Board.

iv. The Head of Department, as Chief examiner, shall make arrangements for the invigilation of examinations in the Department, while the General Studies Unit makes arrangement for the invigilation of compulsory Special Electives (CSC 111 & 112, GNS 111, 112, 113, 114, 211, 212, 213 and 214).

v. Each examination room shall have a minimum of two invigilators, one of whom shall be designated senior invigilator.

vi. Names of invigilators on all campuses for all examinations shall be forwarded to the Provosts of the Colleges and copies of such lists forwarded to the Registrar and Deputy Registrar, Academic Affairs.

4.3 Eligibility to write Examination

i. Only candidates who have registered for courses are eligible to take the Semester examinations.

ii. In order to qualify to sit for an examination, a student must have attended a minimum of 70% of the lectures.

iv. To be qualified to take an examination, a student must have paid 100% of the prescribed fees at the beginning of the First Semester during the registration period. Any student that is unable to make full payment at the prescribed period must seek the approval of the Registrar for part-payment of the fees which may not be less than 50% of prescribed fees. Half payment should be made before the end of the period for late registration for the First Semester while full payment should be made before the end of registration for the Second Semester.

4.4 Examination Time-Table

i. The Sub-Committee on Examination Time Table shall make available the Semester Teaching and Examination Time-Tables at the beginning of each semester to guide students in the selection of courses.

ii. The Academic Affairs Unit shall re-circulate the examination time-Table for all courses at least 4 weeks before the examination date to avail students the opportunity of submitting complaints on clashes. All clashes are submitted to the Head of Department who shall remit same to the Examination time-table committee.

iii. The final time-table shall be displayed on all notice-boards two weeks before the examination after which there shall be no adjustment without the permission of the Registrar.

iv. The time and venue for each examination shall be strictly adhered to and when it is absolutely necessary to rescheduled an examination, the Head of Department

will do so after due consultation with the Provost and such a change shall be published giving the affected candidates a minimum of 48 hours' notice of the change.

4.5 Invigilation Arrangement

i. It is misconduct for an invigilator to arrive late to the venue of an examination. It is the responsibility of the Head of Department and Chief Examiner to ensure that all invigilators are aware of their responsibility.

ii. One hour before an examination, all examination hall shall be vacated and prepared for the examination. Candidates shall be checked into examination halls by invigilators who will determine the sitting arrangement of candidates.

iii. No student without an identity card will be allowed into an examination hall.

iv. Checking-in of candidates into the examination hall shall commence 30 minutes before commencement of an examination.

v. Candidates who arrive late shall not be allowed extra time except in special circumstances such as instances of unresolved clashes of which the candidate had duly notified the Chief Examiner in writing.

vi. In case a candidate has to leave the examination room temporarily, he shall be accompanied by an invigilator.

vii. Invigilators shall maintain vigilance throughout the examination period and at no time will an examination hall be without an invigilator.

viii. Until the time when candidates are allowed to leave the examination hall at the end of the examination, no copy of the examination question paper shall be removed from the examination hall. If for any reason a candidate has to leave the examination hall one or two hours into the examination for a three hour paper, he shall hand over both the answer script and examination question paper to the invigilator before leaving.

ix. Invigilators shall complete attendance sheets in duplicate and the signed sheets shall be considered as the final list of candidates in the examination. One copy will be forwarded to the Registrar while the other copy will be enclosed in the envelope containing the answer script.

x. At the end of an examination, candidates shall hand over their answer scripts to the invigilator who shall check the candidates' answer scripts against the attendance list to ensure that the scripts are complete. The invigilator shall then seal the envelope containing the answer scripts together with copies of the relevant question paper and a copy of the attendance sheets and deliver them to the Examination Officer.

xi. Where an examination malpractice is committed, the candidate involved shall be required to make a statement by completing the required examination malpractice form. The candidate shall however be allowed to complete the examination. Under no circumstances shall an invigilator seize a candidate's answer script, tear answer script or forcibly eject a candidate from an examination hall. Where a candidate's behavior constitutes a breach of the peace, the security official on duty shall intervene.

xii. Where a candidate falls ill in an examination hall, the invigilator shall contact the medical officer on duty for immediate medical attention. Telephone numbers of the security and medical personnel shall be made available to all invigilators.

xiii. Reports on all examination malpractices shall be sent to the Registrar by the Chief Invigilator. The Registrar shall forward such report to the Vice-Chancellor within 24 hours who in turn shall forward same to the disciplinary committee for thorough investigation and recommendations.

xiv. All cases of examination malpractices shall be concluded within two months of the conclusion of the semester examination.

xv. The signed report of the Central Examination Malpractices Investigation Panel be forwarded to the Vice-Chancellor who as chairman of Senate may take action and report same to Senate.

4.6 Absence from Examination

1. Any Student who fails to register for courses during the semester without permission shall be scored zero (0F) in 15 units which is the minimum number of units required for registration for full-timer students.

2. Candidates who registered for courses, attended classes, and took the required tests but failed to take the semester examination without permission should be given continuous assessment grade on each of the affected courses but a grade of zero (0) in the examination.

3. When a student falls ill before and examination, he is under obligation to send a medical report countersigned by the medical doctor of the university Health Centre not later than one week after the examination to the Chief Examiner. Cases of submission of medical reports outside this period shall be considered on their merit.

4. A candidate applying for leave of absence on medical grounds must forward his application through his head of Department to the College Board. The medical report must be countersigned by the medical doctor at the University Health Centre.

5. Absence from examination other than on medical grounds may be considered on its own merit.

6. A candidate who is permitted to discontinue with an examination by the medical officer on health grounds shall not be penalized and shall be allowed to take the examination at the next available opportunity.

4.7 Guidelines for the Procession of Results

1. Course Lecturers shall collect sealed package of answer scripts from the Examination Officer within 24 hours of completion of examination.

2. Computed grades must be submitted to the Departmental Examination Committee for consideration within two weeks after the completion of the last examination paper.

3. The Departmental Examination Committee comprising the following membership shall meet within three weeks after examination.
   a. Head of Department - Chairman
   b. University Examiners as approved by Senate for the Department.

4. The College Board shall meet to consider recommendations from the Departmental Examination Committee four (4) weeks after examinations.

5. The grades of students from other Departments including grade for Special Electives shall be forwarded through the Head of Department within two days of the meeting of the Departmental Examination Committee.

6. The Committee of Deans and Directors shall meet to consider the recommendations from the College Board which shall be presented by Heads of Departments and Departmental Examination Officers. Such meeting(s) shall be held within four weeks of the completion of the Semester Examination.

7. Matters arising shall be provided on all cases requiring explanation such as cases of students with no results in some or all courses, students with zero (F0) in some courses as well as students who registered for less than 15 Units and students who registered for less than 15 Units on leave of absence or with no registration information.

8. All presentations of results shall include the master mark sheet, reflecting grades, pass list by name, the summary of results and key to courses.

9. Semester results shall be ready for the consideration of Senate not later than six weeks after the completion of the last paper.

4.8 Examination Related Offences and Corresponding Penalties as approved by Senate

S/n	OFFENCES	PENALTIES
1.	Possession of examination answer booklet(s) prior to the examination	Suspension for one (1) Semester

2	Possession of valid question papers prior to the examination period (leakage)	Dismissal
3	Impersonation and hire of examination mercenaries	Dismissal
4	Smuggling out question paper while the examination is in progress	Zero (0F) in course + Suspension for two (2) Semester
5	Smuggling in prepared answers on handkerchief, examination stationery, part of the body, scraps of paper etc.	Zero (0F) in course + Suspension for two (2) Semester
6	Exchange of answer sheet between students	Zero (0F) in course + Suspension for two (2) Semester
7	Exchange of question papers on which answers have been written by students	Zero (0F) in course + Suspension for two (2) Semester
8	Copying from notes, scraps of papers, prepared answers textbooks, handsets and fellow students	Zero (0F) in course + Suspension for two (2) Semester
9	Possession of handsets in the examination hall	Suspension for two (1) Semester
10	Aiding, abetting and spying on another candidate during examination	Zero (0F) in course
11	Submission of answer script with different handwritings	Dismissal
12	Submission of script without student's registration on the attendance list	Zero (0F) in course
13	Refusal of students to submit answer script at the end of the examination	Zero (0F) in course + Suspension for two (1) Semester
14	Tampering with other students' answer scripts (mischievous handling, hiding, tearing etc	Zero (0F) in course + Suspension for two (2) Semester
15	Refusal to complete the examination malpractices form after involvement in malpractice	Zero (0F) in course + Suspension for two (2) Semester
16	Insubordination/failure to obey invigilators' instructions during examination	Zero (0F) in course+ Suspension for one (1) Semester
17	Refusal to appear before the Examination Malpractices Panel after two (2) invitations	Dismissal
18	Assault/battery/harassment of invigilators	Dismissal
19	Assault/battery/harassment of co-students for non-cooperation in examination malpractices	Dismissal
20	Sitting within a close range of a place where implicating material is found	Strong warning

5.0 DEPARTMENTAL ADMINISTRATION

5.1 General Administration of the Department/Programmes

The Head of Department directs and coordinates the academic and administrative activities of the Department and he/she is responsible to the Provost of the College. The Department disseminates information emanating from Senate, University and College Board meetings at Departmental meetings chaired by the Head of Department. Regular Departmental meetings are held to ensure that every staff member is part of the decision making process. At such meetings, decisions are taken and duties/responsibilities are shared among the members to ensure that the goals of the programmes and that of the Department are realized.

5.2 Students' Welfare

The welfare of students is of importance to the Department. Apart from the University Counseling Unit that handles cases requiring student counseling, the Department operates Staff/Students interactive forum where students are properly guided on all aspects of their academic development. Every student is also allocated a staff adviser, who handles all aspects of students' academic development. Students with complex cases bothering on emotional and physical problems are referred to the Student Affairs Unit of the University for Appropriate counseling while those that have health problems are handled by the University Health Centre. Indigent and brilliant students are also recommended to the appropriate University Committee for consideration for University scholarships.

5.3 Handling of Academic Grievances

The Department has in place a robust system of handling academic grievances of students. These students are required to contact the Head of Department and after initial counseling are advised to write officially through the Head of Department to appropriate units of the University. Apart from endorsing such letters, the HOD also monitors such students' requests to ensure appropriate responses from units concerned.

5.4 Student Academic Advising

At the beginning of every session, all students in the Department are attached to academic staff of the Department as Staff Advisers. The Staff Advisers are required to counsel the students on all aspect of their academic work including courses to be registered for, registration for carry over courses and attendance at lectures.

B.Sc Community Health Science Programme

Philosophy of the programme

This programme is geared towards providing man power necessary for Community Health Development of the nation. The program will cover areas in Community Organization and Development, health planning, health counseling, population education, community mobilization and involvement in health related problems, geriatrics and gerontology, Public Health Laws and Outreach/Mobile Health services.

Objectives the Programme:

To substantially improve the quality of health system management and health care from peoples of Nigeria by developing and supporting health policies and programme.

The goals and aspiration of the Wesley University Ondo will be to produce graduates who would be self-reliant and responsible citizens who would have the right perception of the need of the society as follows in order to:

i. extend health education to qualified candidates who are unable to gain admission in existing universities.
ii. inculcate the spirit of vocational and entrepreneurship in students.
iii. promote the advancement of knowledge and its practical applications to general health issues and challenges.
iv. maintain and transform the cultural heritage of the country.
v. develop vocational and business studies for academic and non-academic personnel

ADMISSION REQUIREMENT

The modes of entry are UTME and direct entry. To be admitted into the B. Sc Community health programme the candidate must meet these entry requirement stated below:

Admission by UTME

Candidates must satisfy the minimum University requirements for Admission and are therefore to obtain credits in English Language, Chemistry, Biology, physics, Mathematics in SSCE or its equivalent in not more than two Sittings. With a relevant pass in the Joint

Matriculation Examination(JME) and in the post University Matriculation Examination (Post UME).

Admission by Direct Entry

i. Candidates should hold 3 GCEA/L Credit Pass or equivalence in Biology, Chemistry and Physics plus O/L credits in 5 subjects -Mathematics, Physics, Chemistry, Biology and English Language.

ii. B.Sc. degree holders in relevant science discipline like zoology, microbiology. anatomy, physiology, biochemistry, as approved by the Senate of this University with at least second class (lower) degree.

The B.MLS degree program shall run for 5 years for UTME candidates and 4 years for direct entry candidates. The pass mark for core courses is 50% from 200L. The degree is a classified degree but without specialization.

Professional / License Examination

This will be conducted by the appropriate Registration Board or Council for Community Health Practitioners at the country level, Students will be presented for the professional examination by the University at the end of the entire course.

Courses

100 Level First Semester

S/N	COURSE CODE	COURSE TITLE	CREDIT UNIT	STATUS	LH
1	BIO 101	General Biology I	3	C	45
2	BIO 107	Practical Biology 1	1	C	45
3	CHM 101	General Chemistry 1	2	C	30
4	CHM 107	General Chemistry Practical	1	C	45
5	CSC 101	Introduction to Computer Science	2	R	30
6	GST 101	Use of English and Communication Skills I	2	C	30
7	GST 103	Nigeria Peoples and Culture	2	C	30
8	GST 105	Use of Library, Study Skills and ICT	2	C	30
9	MTH 101	Elementary Mathematics 1	2	R	30
10	PHY 101	General Physics I	2	C	30
11	PHY 103	General Physics Practical I	1	C	45
		Total Credit Units	**20**		

100 level Second Semester

S/N	COURSE CODE	COURSE TITLE	CREDIT UNIT	STATUS	LH
1	BIO 102	General Biology II	3	C	45
2	BIO 108	General Biology practical II	1	C	45
3	CHM 102	General Chemistry II	2	C	30
4	CHM 108	General Chemistry Practical II	1	C	45
5	GST 102	Use of English and Communication Skills II	2	C	30
6	GST 104	Logic, Philosophy and Human Existence	2	C	30
7	GST123	Arabic/French language	2	R	30
8	CHS 102	Contemporary Health Issues	2	C	30
9	MTH 102	Elementary Mathematics II	2	R	30
10	PHY 102	General Physics II	2	C	30
11	PHY 108	General Physics practical II	1	C	45
12	SOC 102	Community Organization and Development	2	C	30
		Total Credit Unit	**23**		

Sessional Total Credit Load = 43

200 Level First Semester

S/N	COURSE CODE	COURSE TITLE	UNIT	STATUS	LH
1	ANA 201	Human Anatomy 1	3	C	45
2	GST 201	Peace and Conflict Resolution	2	C	30
3	MCB 211	Introductory Microbiology	2	R	30
4	CHS 201	Social and Behavioral Change Communication	2	C	30
5	BCH 201	General Biochemistry I	2	R	30
6	EHS 201	Introduction to Environmental Health	2	C	30
7	PHS 201	Human Physiology 1	2	C	30
8	CHS 203	Introduction to Primary Health Care	2	C	30
9	CHS 205	Social Psychology	2	C	30
10	CHS 207	Clinical Skills 1	2	C	30
11	CHS 209	Introduction to Community Health	2	C	30
		Total Credit Units	**23**		

200Level Second Semester

S/N	COURSE CODE	COURSE TITLE	UNIT	STATUS	LH
1	ANA 202	Anatomy II	3	C	45

2	GST 202	Introduction to Entrepreneurial Studies	2	C	30
3	BCH 202	General Biochemistry II	2	R	30
4	PHE 202	Biostatistics	2	C	30
5	CHS 206	Fundamentals of Epidemiology	2	C	30
6	CHS 208	Introduction to Medical Sociology	2	C	30
7	CHS 210	Nigeria Health System	2	C	30
8	PHS 202	Human Physiology II	2	C	30
9	CHS 222	Supervised Clinical Attachment I	2	C	30
		Total Credit Units	**21**		

Sessional Total Credit Load = 42

300 Level First Semester

S/N	COURSE CODE	COURSE TITLE	UNIT	STATUS	LH
1	GST 301	Entrepreneurship Skills	2	C	30
2	CHS 301	Human Nutrition	2	C	30
3	PHM 301	Pharmacology of Essential Medicines	2	C	30
4	MLS 301	Laboratory/Diagnostic Services	2	C	30
5	CHS 303	Clinical Skills II	2	C	30
6	CHS 305	Professional Ethics	2	C	30
7	CHS 307	Immunology and Immunization, Cold Chain System	2	C	30
8	CHS 309	Communicable Diseases	2	C	30
9	CHS 311	Control and management of HIV/AIDs	2	C	30
10	CHS 313	Clinical Attachment II	2	C	30
11	CHS 315	Family Case Study	2	C	30
		Total Credit Units	**22**		

300 level Second Semester

S/N	COURSE CODE	COURSE TITLE	UNIT	STATUS	LH
1	CHS 302	Essential Newborn Care	2	C	30
2	CHS 304	Child Health/IMCI	2	C	30
3	CHS 306	Reproductive Health 1	3	C	45
4	CHS 308	School Health Programme	2	C	30
5	CHS 310	General Symptomatology	2	C	30
6	CHS 312	Maternal Health 1	3	C	45
7	CHS 314	Health Management Information	2	C	30

8	CHS 316	Community Diagnosis, Mobilization and Domiciliary Services	3	C	45
9	CHS 318	Use of standing orders/Other Treatment protocols I	2	C	30
10	CHS 320	Community Mental Health	2	C	30
		Total Credit Units	**23**		

Sessional Total Credit Load = 45

400 Level First Semester

S/N	COURSE CODE	COURSE TITLE	UNIT	STATUS	LH
1	PSY 401	Adolescent Health	2	R	30
2	CHS 401	Oral Health Care	2	C	30
3	CHS 403	Primary Eye Care	1	C	15
4	CHS 405	Accident and Emergency	2	C	30
5	CHS 407	Field Attachment (Community Mobilization)	3	C	90
6	CHS 409	Primary Ear, Nose & Throat Care	2	C	30
7	CHS 411	Occupational Health and Safety	2	C	30
8	CHS 413	Care of Persons with special need	1	C	30
9	CHS 415	Clinical Skills III	2	C	30
10	CHS 417	Disaster and risk management	**2**	**C**	**30**
11	CHS419	Emerging and re-emerging diseases	**1**	**C**	**15**
		Total Credit Units	**20**		

400 Level Second Semester

S/N	COURSE CODE	COURSE TITLE	UNIT	STATUS	LH
1	CHS 402	Maternal Health 11	2	C	45
2	CHS 404	Geriatrics and Gerontology	2	C	30
3	CHS 406	Primary Emergency Obstetric Care	2	C	45
4	BHM 410	Principles of Accounting	2	R	30
5	CHS 408	Practicum and Field Attachment	3	C	90
6	CHS 410	Research Methodology/Research writing	2	C	30
7	CHS 412	Use of standing orders and other treatment protocols II	2	C	30
8	CHS 414	Gender and health	**2**	**C**	**30**

9	CHS 416	Introduction to traditional and complimentary medicine	**2**	**C**	**30**
10	CHS 418	Clinical Skills IV	2	C	30
		Total Credit Units	**21**		

Sessional Total Credit Load = 41

500 Level First Semester

S/N	COURSE CODE	COURSE TITLE	UNIT	STATUS	LH
1	CHS 513	Epidemiology and Control of Non-communicable diseases	2	C	30
2	CHS 503	Health Policy, Planning and Evaluation	2	C	30
3	CHS 501	International Health	2	C	30
4	CHS 507	Health Economics	2	C	30
5	CHS 509	Primary Health Care Management	2	C	30
6	CHS 511	Food hygiene and safety	2	C	30
7	CHS 515	Human Resource for Health	2	C	30
8	CHS 517	Public Health Law	2	C	30
9	CHS 505	Outreach/Referral Services	2	C	30
		Total Credit Units	**18**		

500 Level Second Semester

S/N	COURSE CODE	COURSE TITLE	UNIT	STATUS	LH
1	CHS 599	Research Project	6	C	90
2	CHS 508	Professional Practice Paper	2	C	30
3	CHS 510	Monitoring and Evaluation	2	C	30
4	CHS 512	Seminar in Community Health	2	C	30
5	CHS 516	Population Dynamics and Family Planning	2	C	30
6	CHS518	**I**ntroduction To Paratasitology/Medical Entomology	2	C	30
		Total Credit Units	**16**		

Sessional Total Credit Load = 34

Course Synopsis

100 Level (First Semester)

101 BIO 101 General Biology I (3 Units)

As available in the Department of Biology

BIO 107 Practical Biology I (1 Units)

Simple practical based on BIO101 theoretical courses

CHM 101 General Chemistry I (2 Units)

This course includes elementary units in chemical reactions, electronic configuration, nucleus and radioactivity, chemical bonding covalent and co-ordinate covalent. Chemical bonding; metallic and intermolecular bonding, classification of elements, Atomic orbital model, gradations of atomic properties, mole concept I and II, Kinetic theory and states of matter, Gas laws I and II, Liquids and Solids.

CHM 107 Practical Chemistry I (1 Units)

Simple practical based on CHM 103 theoretical courses

CSC 101 Introduction to Computer Science (2 Units)

What is Computer, Types of Computer, History of digital computer, Elements of a Computer, Hardware and Software, How to work with Computer; Computer Operating System.

GST 101 Use of English and Communication Skills I (2 Units)

This course is to enable students to learn the skills of listening and comprehension, retrieve information, for interpreting and evaluation, effective reading skills, comprehending at varying speed levels, reading for vocabulary development to various academic content. The contents will include teaching students to develop listening enabling skills, listening and comprehending comprehension, note taking and information retrieval. Including data, figures, diagrams and charts. Listening for main idea, interpretation and critical evaluation. Effective reading. Skimming and scanning. Reading and comprehension at various speed levels. Vocabulary development in various academic contexts. Reading diverse texts in narratives and expository. Reading and comprehension passages with tables, scientific texts. Reading for interpretation and critical evaluation.

GST 103 Nigeria Peoples and Cultures (2 Units)

perception of the world; Culture areas of Nigeria and their characteristics; Evolution of Nigeria as a political unit; indigene/settler phenomenon; Concept 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 to citizens, environmental problems.

GST 105 Use of Library, Study Skills and ICT (2 Units)

Windows Files, Word Processing, copying a text, saving, changes to a document and formatting, spelling checker and introduction to printing a document. Spread sheet, Entering and correcting data. Using Formula, Numeric Formats, Creating charts, Types of Charts, Power points and presentation, Networking, internet and E-mail. Reading and responding to an e-mail message

MTH 101 General Mathematics l (2 Units)

The course content will be as applicable to the domicile university offering the programme.

PHY 101 General Physics I (2 Units)

Fundamental principles of mechanic, Mechanical properties of matter including elasticity, surface tension and viscosity. Mechanical waves. Thermal Physics: Thermal properties including elementary thermodynamics and kinetic theory.

PHY 107 Practical Physics 1 (1 Unit)

Simple practical based on PHY 101 theoretical courses

100 Level (Second Semester)

BIO 102 General Biology II (3 Units)

As available in the Department of Biology

BIO 108 Practical Biology II (1 Units)

Simple practical based on BIO 102 theoretical courses

CHM 102 General Chemistry II (2 Units)

As available in the Department of Chemistry

CHM 108 Practical Chemistry II (1 Units)

Simple practical based on CHM 102 theoretical courses

GST 102 Use Of English and Communication Skills II (2 Units)

Writing Paragraphs; Topic Sentence and Coherence, Development of Paragraphs; Illustration, Description, Cause and Effect, Definitions. Formal Letters; Stylistic Forms, Essential Parts, Complaints and Requests, Letters about Jobs, Ordering Goods, Letters to Government and Other Organizations. Writing Reports; Reporting Events and Experiments. Writing Summaries; Techniques of Summarizing. Letters and Sounds in English, Vowels and Consonants, Interviews, Seminar Presentation, Public Speech Making, Articles, Concord and Sentences, Tenses, Gerunds and Participles, Active, Passive and the Infinitive, Modal Auxiliaries.

GST 104 Logic, Philosophy And Human Existence (2 Units)

A brief survey of the main branches of Philosophy Symbolic Logic Special symbols in symbolic Logic-conjunction, negation, affirmation, disjunction, equivalent and conditional statements law of tort. The method of deduction using rules of inference and biconditionals qualification theory. Types of discourse, Nature or arguments, Validity and soundness; Techniques for evaluating arguments; Distinction between inductive and deductive inferences etc. (Illustrations will be taken from familiar texts, Including literature materials, Novels, Law reports and newspaper publications

GST 106 Contemporary Health Issues (2 Units)

Contemporary issues on health in transition and health tech nologies are areas of emphasis, providing the students certain awareness in public health. Particular emphasis will be given to

the priority health problems presenting. Amongst these would include: malaria, polio, HIV/AIDS, tuberculosis/leprosy, cerebrospinal meningitis, maternal mortality and infant mortality. In addition, information technology and interdisciplinary collaboration presents challenges to contemporary health workers in a constantly changing global community.

MTH102 Mathematics II (2 Units)

As available in the faculty that runs the programme

PHY 102 General Physics II (2 Units)

Fundamental laws of electricity and magnetism and their application. Electron Physics; Introduction to Physics of electronics and some applications. Optics: Principle and application of geometrical and physical optics.

PHY 108 Practical Physics 11 (1 Units)

Simple practical based on PHY 102 theoretical courses

SOC 102 Community Organization And Development (2 Units)

As available in the faculty that runs the programme.

200 Level First Semester

ANA 201Human Anatomy- 1 3 UNITS

This course introduce the students to Anatomical Terminologies, structural organization of the body, and elementary study of the skeletal, muscular system and organs associated with all the body system(Cardiovascular, respiratory, Digestive, Excretory and reproductive systems) stating their functions.

BCH 201 General Biochemistry I (2 Units)

Acidity and Alkalinity, PH, and their effects on cellular activities, Buffers, Chemistry of amino acids, proteins and their derivatives. Chemistry and structures of carbohydrates and their nomenclature, Chemistry, structure and functions of lipids nucleic acids. Viruses structures and functions of cells and organelles. Transport process (passive and active). Basic concepts of biochemical energetic.

CHS 201 Social And Behavioural Change Communication (2 Units)

This course introduces the study and application of basic social psychological processes in relation to selected health–related behaviours (e.g. family planning, overeating, smoking, non-medical drug use, cardiovascular risk factors, patient compliance and medical care utilization). Students will also explore and apply principles of modifying health behaviours on an individual, group and community level for the prevention of health problems or the adoption of health lifestyles. Emphasis is placed on improving student competency in communication, decision making and counseling skills for assisting others in confronting personal health concerns. The course would also expose students to the factors which affects human health such

as hereditary and environment and various motivational forces which imparts on human behaviour.

CHS 203 Introduction to Primary Health Care (2 Units)

This course is designed to enable the student acquire the knowledge and skills required to enable him/her provide effective PHC delivery services in the community.

The concept of PHC and the development of Nigerian Health System, the concept of health, the concept of advocacy, Community Mobilization, importance of Community diagnosis in PHC, situation and analysis and problems associated with implementation of PHC at the LGA

CHS 205 Social Psychology(2 Units)

This course covers health issues related to personalities such as personality and you, relating with others, stress, emotions and your health, mental and emotional disorders, drugs abuse (alcoholism) and tobacco smoking. Also the course will include issues on accruing good health knowledge, and forming healthful habits.

CHS 207 Clinical Skills (2 Units)

The course is designed to introduce the students to basic principles of interview, procedure involved in history taking, physical examination, procedures involved in monitoring vital signs, tepid sponging, preparation and administer low Osmolarity + Zinc (L0'ORS). Procedures of aseptic technique in clinical procedure and medication.Procedures involved in wound dressing. Content and use of diagnostic set. Administration of injection and drugs. Collection of urine specimen, procedures for urine testing, estimation hemoglobin using appropriate procedures and instruments. Carrying out oral toilet. Setting of infusion. Perform visual acuity test, breast self-examination.

EHS 201 Introduction to Environmental Health (2 Units)

The aim of the course is to acquaint the student with the role of the environment as the determinant of health. The content of the course will be presented in the form of lectures, seminars and field visits. This course is design for undergraduate students in Public Health and others in the health science programmes. The course highlights the three cardinal areas of the environment (biological, physical/chemical and socio-cultural environments). Specifics areas to be highlighted include the rural and urban environments in relation to housing and health, water sources and supplies, sewage and refuse disposal.

GST 201: Peace Studies and Conflict Resolution (2 Units)

Basic Concepts in peace studies and conflict resolution, Peace as vehicle of unity and development, Conflict issues, Types of conflict, e. g. Ethnic/religious/political/economic conflicts, Root causes of conflicts and violence in Africa, Indigene/settler phenomenon, Peace – building, Management of conflict and security. Elements of peace studies and conflict resolution, developing a culture of peace, Peace mediation and peace-keeping, Alternative Dispute

Resolution (ADR). Dialogue/arbitration in conflict resolution, Role of international organizations in conflict resolution, e.g. ECOWAS, African Union, United Nations, etc

PHS 201 Human Physiology- 1 (2 Units)

The course deals with the functions and interactions of the following body systems m body fluids and blood, cardiovascular, respiratory, renal and general and cell physiology. The course will take into consideration the needs of the students as they interact with the various categories of people according to their levels of education. Hence basic pathophysiologic conditions like hypertension, renal failure disease of the new born and other basic public health implications would be taught.

MCB 211 Introductory Microbiology (2 Units)

Topics covered in this course are as follows- historical development in microbiology and the fundamental germ theories. Significance of microbes in health, agriculture, environment and industry. Distinguishing properties/ characteristics, structure and classification of microorganisms, environmental factors favoring microbial survival/ growth inhibition and death. Universal laboratory practices viz: microscopy, sterilization of culture media and equipment. Microorganism and diseases: pathogenic and commensal microbes- concept of normal floral and opportunistic pathogens. Host-parasitic relationship. Modes and routes of microbial infections and infestations. Epidemiology, surveillance and prevention of infections. Principles of microbial genetics. Antibiotics, vaccines and toxins, microbial virulence and innate body defense.

CHS 209 Introduction to Community Health (2 Units)

The course focus on introducing students of community health. It deals with the foundation/History of community health, major tools of community health, factors that affects community health, community and population health through lifespan, Community Nutrition, Home visiting/Home rounds, theory and methods of community health assessment, promotion and improvement. Emphasizes critical thinking, communication and professional development skills for planning, implementing and evaluating community health programmes and prepares students to complete an integrative individual capstone project.

200 LEVEL SECOND SEMSTER

ANA 202 Human Anatomy- 11 (3 Units)

This is a continuation of the first course in anatomy. It begins with a review of the structure of the kidneys, including the microstructures, enabling an understanding of the functions of the kidney. The structures of the brain, the spinal cord and the neurons, the blood supply, the respiratory system and the pelvic organs. The study will also examine the structures of the endocrine and secretary organs as well as the anatomical structures of special senses such as the ear eye, etc. It will also consider the pelvic, perineum and the head and neck regions. Gross and applied anatomy will be discussed along with practical classes so that students will appreciate how these structures function.

BCH 202 Medical Biochemistry 1I (2 Units)

Carbohydrate metabolism, Lipid metabolism, Proteins, structure and function, Amino acid metabolism, Nucleosides, Nucleotides and nucleic acids. Classification of viruses based on the manner of gene expression (TMV, T4, phage, Tumor viruses). Enzymes structure and function. Simple kinetics of enzymes-catalyzed reaction. Specified enzymes and their functions. Clinical applications of enzymes water and mineral metabolism. Acid- base control. Disturbance of acid-base control. Renal function and the composition of urine.

CHS 206 Fundamentalsof Epidemiology (2 Units)

This course discusses the application of epidemiologic principles in public health practice, including the investigations of epidemics, disease surveillance, clinical applications, evaluation of health programmes and the planning of preventive programmes. Students will use and receive instructions in micro-computer applications and the use of EPI-INFO software for data entry analysis and presentations.

The course syllabus will also cover areas such as data processing, comparison of data processing methods. Management information system, important concept. Data and information to include types, definition of terms and characteristic/ properties of good information. To understand the need for data information and management system as a tool in the study of public and community health.

CHS 208 Introduction to Medical Sociology (2 Units)

This course is designed to enable the student to understand the relationship between sociology and medical sciences and its application in the health care system in Nigeria. The social and cultural aspects of medicine. The causes and family/societal responses to illness. Relationship between societal class and illness, health practitioner and clients. The general principles of social planning as it affect healthcare delivery system in Nigeria. The complementary nature of the practice of modern and traditional medicine.

CHS 210 Nigeria Health System (2 Units)

The Community Health Practitioners need full understanding of the Nigerian Health
System in order to deliver appropriate health care services needed by the entire citizenry.

At the end of the course, the learners should be able to understand the stages of development, philosophy and policy related to health in Nigeria and also the quiescent of Nigerian population and Sustainable Development Goals (SDGs)

CHS 222 Supervised Clinical Attachment 1 (2 Units)

Students are taken through experiential learning through clinical postings in the various units where clients receive physical examination, wound dressing, use of diagnostic set. Administration of injection and drugs. Collection of urine specimen, procedures for urine testing,

estimation hemoglobin using appropriate procedures and instruments. Carrying out oral toilet. Setting of infusion. Perform visual acuity test, breast self-examination.

GST 202: Introduction to Entrepreneurship (2 Units)

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 capital; Financial planning and management; Starting a new business, Feasibility studies; Innovation; Legal Issues; Insurance and environmental considerations. Possible business opportunities in Nigeria.

PHE 202 Biostatistics (2 Units)

Techniques of research design and analysis for health scientists. Principle of experimental design. Clinical trial planning. Study size determination analysis. Analysis of variance for factorial and split-plot experiments. Analysis of Covariance. Multiple regressions. Non-parametric hypothesis testing. Principle of survey design

PHS 202 Human Physiology- 11 (2 Units)

Lectures and critical reviews will be used to discuss recent significant research advances in the fields of protein nutrition and metabolism pertinent to mammalian physiology. Lectures and critical reviews will be used to discuss recent significant research advances in the field of energy/carbohydrate nutrition and metabolism pertinent to the mammalian with physiological content. This course will discuss the endocrinology, nervous and reproductive integrative in relation to their patho-physiologic conditions

300 Level First Semester

CHS 301 Human Nutrition (2 Units)

This 2 credits course is a study of the scientific foundation of Human Nutrition. It undertakes a study of the living cell as a unit of the structure of the human system. It gives detailed discussion of the major nutrients- carbohydrates, lipids, amino acids, vitamins and minerals. It undertakes a study of the metabolic interrelationship among nutrients. An overview of intermediary metabolism, digestion, and metabolism of nutrients, lipids and proteins. The importance of fluid and electrolyte balance. The process of digestion through the GIT and the diagnosis and therapy of the digestive tract.

The course also deals with various conditions of nutrition disorders and diseases (Obesity, Kwashiorkor, Marasmus, Anorexia nervosa, Vitamin Deficiency, Trace elements deficiency) i.e. in children under five, adolescence and in pregnancy. It also discuss on various methods of maintaining of food safety and security at family and community level.

CHS 303 Clinical Skill II (2 Units)

The course exposes students to a comprehensive and holistic approach to health assessment across the life cycle, the course contents include an overview of health assessment, types of

assessment pain assessment, history, general survey, physical examination techniques and practice, assessment of individuals from head to toe looking at the integumentary system - Hair, Skin and Nails, neurological assessment, musculoskeletal assessment, head and neck, eyes, ears, mouth, nose, and pharynx; the torso - breasts and regional Lymphatic, thorax and lungs, heart and neck vessels, peripheral vascular system, the abdomen, male genitalia, female genitalia, anus, rectum and prostate. Students are provided with practical experiences of conducting complete physical examination in the same logical sequence as performed in practice using standardized patients.

CHS 305 Professional Ethics (2 Units)

Role of Ethics in Community Health Practice, legal aspects of Community Health Practice. Concept of Morality. Professional Regulatory Bodies – Legal authority of the Board.

CHS 307 Immunology, Immunization And Cold Chain System (2 Units)

History of Immunization, Concept of vaccines /vaccination. Cold Chain Management, Vaccine Requirement, Procurement and Storage. Vaccine administration, Immunization strategies, Introduction to immunology – innate and acquired immunity; Antigens and antibodies; antigens and antibody reactions and immune response to infection; Humoral and cell-mediated immunity, immunity and infectious diseases; Hypersensitivity states; Prophylactic and therapeutic applications of immunity; Auto-immunity and its relation to human diseases; Transplantation immunology; Immuniosuppression and immune-deficiency states. Types of vaccines, their uses and methods of administration, requisition for vaccines; collection, storage and distribution of vaccines; Maintenance of cold chain system; organization of immunization clinics and campaigns, Disposal of vaccines.

CHS 309 Communicable Diseases (2 Units)

Concept of communicable and infectious diseases, etiology, epidemiology of communicable diseases, causes, and pre-disposing factors of communicable diseases Treatment and preventive measures for communicable diseases, concept of immunity and immunization, taking cognizance of the various types and purposes. Various agents of communicable diseases and their associated diseases. Current policies and intervention strategies in diseases control and notification.

CHO 311 Control And Management Of HIV/AIDS (2 Units)

This course describes the basic knowledge and skills on HIV and AIDS needed by Community Health practitioners to identify, diagnose, manage and rehabilitate patients as well as provide various types of clinical and preventive services to clients in the communities. The learner must demonstrate skills in laboratory investigation on HIV/AIDS and carter for People Leaving With HIV/AIDs (PLWHA) in the community.

CHS 313 Clinical Attachement II (2 Units)

Students are taken through experiential learning through clinical postings in the various unitswhere patients receive bathing in bed, performing nail and foot care, Providing genital and perineal care, application of cold compress, application of an Ice compress, providing sitz bath. Care of a body after death (Last office). Performing nebulization therapy, applying dry, nonsterile dressing. Use of pulse oximeter, assessment of consciousness using Glasgow

CHS 315 Family Case Study (2 Units)

The course introduces student to problem solving skills, how to perform a study that will allow them to determine a family's health status through assessment and critical inspection. It includes how to identify a family to study, present medical history, past medical history, identification of health problems (Physical, Mental, social etc) in the family, proffering intervention strategy, and writing a report etc. It equips the student with knowledge on how to identify health and health-related and how to intervene just to give a holistic care and improve the deficiency.

GST 301 Entrepreneurship Skills (2 Units)

Some of the ventures to be focused upon include the following: Soap/Detergent, Tooth brushes and Tooth paste making. Photography; brick, nails, screws making; dyeing/Textile blocks paste making; rope making, plumbing, vulcanizing, brewing, glassware, production/Ceramic, production Paper production; Water treatment/Conditioning/ Packaging; Food processing/packaging/preservation; Metal working/Fabrication – Steel and aluminium door and windows; Training industry; Vegetable oil/and Salt extractions; Fisheries/Aquaculture; Refrigeration/Air conditioning; Plastic making; Farming (crop); Domestic Electrical wiring; Radio/TV repairs; Carving; Weaving; Brick laying/making; Bakery ; Tailoring; Iron welding; Building drawing; Carpentry; Leather tanning; Interior decoration ;Printing; Animal husbandry (Poultry, Piggery, Goat etc); Craft – Blacksmith, Tinsmith etc ;Sanitary wares; Vehicle maintenance; Bookkeeping.

MLS 301 Laboratory Diagnostic Services (2 Units)

This course is designed to enable the students acquire proficiency in diagnostic and laboratory skills. Diagnostic skills and procedure in community health practice. The principles and basic techniques of laboratory test and management of laboratory clinic.

PHM 301 Pharmacology Of Essential Medicine (2 Units)

The course introduce the student to the concepts of the National Drugs Policy, National Drug Formulary, Management of Essential Drugs and Supply system, Essential Drugs list and pharmacology of Essential Drugs in Primary Health Care, concept of Drug Revolving Fund. General Principles of Drug Action: Dose - Response Relationships. Drug Receptor, Interactions,

Sequestration of Drugs: Routes of Administration – Absorption, Distribution, Biotransformation. Excretion Pharmacogenetics, Pharmacodynamics. Pharmacokinetics. Principles of Bio-availability of Drugs continued.

300 Second Semester

CHS 302 Essential New Born Care (2 Units)

This course describes the care of the New born and infants as well as forms of health services provided to them to decrease infant and child morbidity and mortality.
At the end of the course, the learners should be able to: Evaluate the immediate care of the new born and problems associated.

CHS 304 Child Health /Imci (2 Units)

Physiology and care of the new born, process of growth and nutrition in children 0-5 years, assessment of the health and immunization status of children 0-5 years. Children who are At Risk for specific condition, concept of integrated Management of Childhood illness (IMCI), condition which may expose the child to grave danger, interventions currently include in the IMCI strategy. Use of integrated Management of Childhood illness Standing Orders, the rights of the child as declared by the United Nation.

CHS 306 Reproductive Health I (3 Units)

The course is aimed at providing the student with the skills and expertise to effect safe motherhood and birth control. The concept of Anatomy and Physiology of the male and female reproductive health. the process of pregnancy The concept of reproductive health rights, including family planning. The management of labour according to acceptable standard. The care of mother and child during puerperium. Population dynamics and benefits of family planning. Abortion and its possible complications. The concept of infertility, menopause and andropause. The concept of Female Genital Mutilation. Effective control and management of STIs including HIV/AIDS

CHS 308 School Health Programme (2 Units)

A comprehensive School Health Programme is an integrated set of planned, sequential, school-affiliated strategies, activities, and services designed to promote the optimal physical, emotional, social, and educational development of students at community level.
At the end of the course, the learners should be able to perform school medical examination including food vendors, school health inspection and school meal services (School feeding programme)

CHS 310 General Symptomatology (2 Units)

General Symptomatology is the study of various clinical manifestations of disease (signs and symptoms). It is essential to understand the symptomatology of diseases in order to make a proper use of the Standing Orders which is a set of specific guidelines arrange by symptoms which suggest how patient/client with different condition should be cared for. The course is to enable the student have the background on how to diagnose a condition using various presentations in diseases condition. Symptoms are features which patient report, physical signs are elicited at the bedside together they constitute the features of conditions in the patient. Symptoms are first step in learning how to diagnose. All clinicians have known about symptoms and their relief this what clinicians are for. In order to have a general understanding of symptoms, it is good to review the systems and note major symptoms presented in diseases/conditions for ease of diagnosis and differentials.

CHS 312 Maternal Health (2 Units)

This course describes the care of mothers as well as types of health services provided during the stages of preconception, antenatal, delivery and postnatal care in order to reduce maternal, morbidity and mortality.

The course also enable the learner to develop skills on focus antenatal care, use of partograph in the management of Labour, AMSTL active management of third stage of Labour, control of eclampsia using magnesium sulphate and the use of misoprostol at the community level.

CHS 314 Health Management Information System (2 Units)

The course will equip the student to know the definition of concept and terminologies, Management Information System Processes, Identification of National Health Indicators, various forms and Instructional guidelines, monitoring PHC community based Information System (CBIS) at various levels. Channel of Information in NHIMS – supervision, monitoring and evaluation and information flow charts.

CHS 316 Community Diagnosis, Mobilization And Domiciliary Services (3 Units)

Concept of Community Based Health Care. Define Community Diagnosis, situational analysis and community mobilization. Processes for monitoring pregnant and lactating mothers in the community. Collect routine data for monitoring and evaluation of PHC activities from CHEWs and JCHEWs in the community.

CHS 318 Standing Orders/Other Treatment Protocols
(2 Units)

Standing orders are a set of specific guidelines arranged by age group, disease conditions, findings, clinical judgments and actions, which define how clients should be cared.

Describe the historical background of Standing Orders, Identify the layout and format of Standing Orders, Utilize the Standing Orders in different client situations and Describe the use of other job aids and Standard Operation Procedure (SOP). In addition, student are expected to

learn and acquaint themselves with knowledge/ skill to apply other approved National treatment guidelines e.g. IMCI, STI Syndromic Management, Malaria Treatment, Adolescent Health HIV/AIDS Management, etc.

CHS 320 Community Mental Health (2 Units)

This course will enables the student to know the concepts and principles of Community Mental Health Practice, Identification of causes/predisposing factors in mental illness, characteristics of mentally ill person, classification of mental illness, process of early diagnosis of mental disorders and rehabilitation of the mentally ill in the community. Institutional and community-oriented mental health programme, resources for the care of the mentally ill persons in the community, various types of therapy for the treatment of mental illness. Trado-medical and Alternative medical practices in mental health care, the merits and demerits. Preventive measures against mental disorders in the community.

400 LEVEL FIRST SEMSTER

CHS 401 Oral Health Care (2 Units)

At the end of the course the learners will be equip with knowledge and skills of prevention and treatment of common oral health problems, conduct oral examination and promote community oral hygiene;

CHS 401 Primary Ear, Nose And Throat Care (2 Units)

Anatomy and physiology of the Ear, Nose and Throat, recognition and treatment of the diseases of the Ear, Nose and Throat. Reducing complication rates arising from the disease of the Ear, Nose and Throat. Basic equipment vital for diagnosing the Ear, Nose and Throat conditions.

CHS 403 Primary Eye Care (2 Units)

This course deal with Anatomy and physiology of the human Eye, common eye problems their prevention and management, the basic equipment vital and treating eye conditions. It also death with screen for eye defect i.e. (visual acuity test) and expose the learner to skills of assessing the effect of ageing to the eye.

CHS 405 Accident and Emergencies (2 Units)

This course is designed to equip the student with knowledge and skills necessary for prompt recognition of accidents and emergencies for immediate management and referral. Common emergency conditions, diseases and injures. Common signs and symptoms for surgical/medical emergencies and rationale for prompt referral. The management of accident victim. The types of specialist to which identified emergency condition may be referred.

CHS 407 Field Attachment (Community Mobilization) (3 Units)

This is supervised community based experience. Students are expected to live and work in a rural community that has poor health coverage under the supervision of the course lecturer and

preceptors. Study community organization: community entry point, identification of boundaries, sketching of community map, community diagnosis, developing a community health profile, house numbering, conducting interviews, reporting, standard precaution on infection prevention, social behavioural change, tracing defaulters e.g mother crafting and baby traking, provide health care services to the community under the supervision of a licensed and skilled personnel

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CHS 409: Primary Eye, Nose and Throat Care (2 Units)

This course introduces students to anatomy and physiology of the Ear, Nose, and Throat. Recognition and treatment of the diseases of the Ear, Nose, and Throat, reducing complication rates arising from the disease of the Ear, Nose and Throat and basic equipment vital for diagnosing the Ear, Nose and Throat conditions.

CHS 411 Occupational Health And Safety (2 Units)

This course is designed for all students of allied health science programmes. It gives an overview of the history of occupational health in Nigeria and elsewhere. Attention is focused on selected occupational health problems of the various industries and occupations. Also the various target organs and systems affected by specific hazards are highlighted. The course stressed specific areas relating to health hazards from new environmental pollutants, early detection of impairment in occupational exposure to health promotion for working measurement and monitoring and keeping health records.

CHS 413 Care Of Persons with Special Need (2 Units)

Definition andconceptsof disability, disabilitytrends, causes, types, available preventive measuresand rehabilitationin the community.Define thediseases that causedisabilities.List thecommon diseasesthat causedisabilityin the community.Explainthe causes of diseasesthat causedisability. Classify thediseasesthat causedisabilityby the standards ofWorld Health Organization.Includepreventive measures againstdiseasesthat causedisability.List thefacilities andresources availablefor rehabilitation

CHS 415 Clinical Skills III (3 Units)

Bathing a Patient in bed, Performing nail and foot care, providing genital and perineal care, application of cold compress, application of an Ice compress, providing sitz bath. Care of a body after death (Last office). Performing nebulization therapy, applying dry, nonsterile dressing. Use of pulse oximeter, assessment of consciousness using Glasgow.

CHS 417 Intro. To Disaster And Risk Management (2 Units)

Characteristics and classification of Disaster. Causes of Disaster. Relationship between disaster and development. Impact and effect of disaster. Disaster response. Disaster control. Programme for refugee and displaced person. Risk mitigation. Management of epidemics.

CHS 419 Emerging And Re_Emerning Disease (1 Units)

Definition, science, symptoms, prevention, control and treatment of emerging and re-emerging disease. Examples; emerging (Covid -19, SARS, Ebola, Monkey pox, avian flu). Re-emerging disease (Lassa fever cholera, yellow fever, viral hemorrhagic fever, tuberculosis, African trypanosome. Factor contribution to emerging and re-emerging disease. E.g human demographic change, economic development and change, evolution of pathogenic infectious agent, resistance of vector, international, travelling and commerce e.t.c. strategies for reduction of treat to these diseases. Discuss the strategies to reduce the tread of emerging and re-emerging disease. Develop political will and funding. Improve global early response capacity. Improved global surveillance, improved diagnostic capacity, use of vaccine, decreased inappropriate drug use.

PSY 401 Adolescent Health (2 Units)

The course is aimed at providing the student with knowledge and skills to deal with common health problems of the adolescent. Adolescent sexuality and development process. Adolescent reproductive health right. The principles of adolescent and provision of youth friendly services.

400 SECOND SEMSTER

BHM 410 Principles of Accounting (2 Units)

Basic principles of accounting. Government and Commercial Accounting Procedures. Various books used in accounting. Prepare budget, simple account and financial report in PHC.

CHS 402 Maternal Health 11 (2 Units)

The course is the concluding part of the course maternal I. It will focus on drug administration during antenatal, labour and delivery. Students are taken through experiential learning through clinicalpostings in the various units where clients receive maternal health services.

CHS 404 Geriatrics And Gerontology (2 Units)

The course introduces the student to the factors affecting the physiology of ageing. It identifies the common problems of older persons, types and importance of geriatric care and also describes community based facilities for the elderly.

CHS 406 Primary Emergency Obstetric Care (2 Units)

In this course, students will learn about concepts that provide insight on male and female reproductive internal and external structures. We will start with anatomy and Physiology of Male Reproductive System, Anatomy and Physiology of Female Reproductive System, Prenatal Care and Abnormal Pre-Natal Conditions. Pregnancy, High Risk Pregnancy, Conditions Complicating Pregnancy and Abortion. Antepartum hemorrhage (APH), Labour, Episiotomy and Perineal Lacerations. With a focus on Post- Partum Hemorrhage (PPH), module four describes the Management of Postpartum Period, Emergency Obstetric Care and Sepsis. Maternal Mortality, Dehydrations, Hydration and Rehydration, Interpersonal Communications and Counselling.

CHS 408 Practicum(3 Units)

The following constitute the area of skills acquisition and instructions: Antenatal care/post natal ward, labour ward, immunization unit, rural and urban posting, perform community based function, family planning unit, pharmacy unit to know about drug revolving fund, laboratory unit, mental health unit.

CHS 410 Research Methodology And Proposal Writing(2 Units)

The meaning, nature and uses of research in health. Research processes and designs. Methods of data collection, data analysis and presentation. Research proposal and report writing etc.

CHS 412 Use Of Standing Orders II(2 Units)

The course is designed to equip the student with the skills and knowledge on the use of Standing Orders during practicals/theoretical examination including other treatment protocols

CHS 414 Gender And Heath (2 Units)

Gender Mainstreaming. Gender based violence. Gender equity and inequality. Distinguish sex from gender. Relevance of gender to health issue. Importance of both sex and gender in health and healthcare. Gender innovative approaches to health. women's health. Transgender gender and women's health

CHS 416 Introduction to Traditional And Complimentary Medicine (2 Units)

Definitions and domains of complementary and alternative medicine and traditional medicine. Phytotherapy. Natural Products That May Alter Drug Actions. Economic Factors That Influence the Use of Complementary and Alternative Medicine and Traditional Medicine. Homeopathy. Acupuncture. Chiropractic Medicine and Osteopathy. Mind-Body Intervention. Traditional medicine in Africa. Biofield therapy.

CHS 418 Clinical Skills 1V (2 Units)

This course will equip the students to know the procedure involved in wound dressing, cold chain system and its components, procedure of immunizations of patient/client against specific diseases, routes of administration of injection/drugs. Collection of specimens e.g. urine, sputum, blood etc., procedure for urine testing, estimation of hemoglobin using appropriate procedure, carry out oral toilet, visual acuity, breast self-examination, assessment of nutritional status of a child e.g. weighing, height, mid-arm circumference measurement and performing of Rapid Diagnostic Test of malaria (RDTM). Assessment of nutritional status of a child e.g. weight, height, mid-arm circumference. Circumcision, Assessment of dehydration, Catheterization, Episiotomy, Pap smear, suturing of wounds and drip setting. Bathing a Patient in bed, performing nail and foot care, Providing genital and perineal care, application of cold compress, application of an Ice compress, providing sitz bath. Care of a body after death (Last office). Performing nebulization therapy, applying dry, nonsterile dressing. Use of pulse oximeter, assessment of consciousness using Glasgow.

500 LEVEL FIRST SEMSTER

CHS 501 International Health (2 Units)

The course is designed for undergraduate students in public health and others in the health sciences. The course will highlight the three cardinal areas of the environment, i.e. the biological, physical/chemical and the sociocultural environments. Specific areas to be highlighted include the rural and urban environments in relation to housing and health; water sources and supplies, sewage and refuse disposal systems, sanitary control of food; pollution and effects on man and environmental degradation. Visit will be made to specific sites to observe conditions existing with regards to waste sources, air pollution, and food sanitation and liquid/solid wastes disposal.

CHS 503 Health Policy, Planning and Evaluation (3 Units)

This course is intended to prepare students in public health and allied health sciences to organize health programmes that meet specific and identified community needs. The course will analyse the critical issues and logical questions in health planning. The main functions of management implementation of health projects, evaluation process. Students will be expected to develop skills in goals and objectives-setting, strategies to be employed, assessing and mobilizing internal and external resources and linking the results with implementation and evaluation. Also emphasis will be laid on identifying & describing the Health needs and problems of a defined community, Establishing health priorities of a defined community, Setting goals, objectives & target, for primary health services for a defined community, formulating a primary Health care plan and drawing up a primary Health care Budget.

CHS 505 Outreach And Referral Services (2 Units)

It is possible to sustain health services to the population by a combination of approaches. Strategies such as mobile clinics, health caravans, telemedicine and, more recently, telephone-based strategies are examined for their capacity to support population health and front-line community health workers.

Referral System: This course is designed to enable the student acquired necessary knowledge and skills in effective prompt referral. Understand the importance of the 2-way referral in the management of client.

CHS 507 Health Economics (2 Units)

This introduces the approach taken by economics and the scope and contribution of health economics. The concepts of supply and demand, factors influencing demand and supply will be looked into. Also the economic perspective of health, medical spending will be looked into. The demand for health services and the law of demand. Healthcare system and institution like (HMOs), health maintenance organization, and their role in public and community health will be looked into. Also the role of government in financing health and Medicare will be looked into. The general concept of insurance and essential of health insurance will be covered, the role government as health insurer will be overviewed. Health insurance policies and its importance on the health status of the community as whole will be looked into. NHIS, Basic Health fund.

CHS 509 Primary Health Care Management(2 Units)

Definition of Concepts, Principles and Functions of PHC Management. Management Theories and Application in Health Care Delivery. Health planning and the process of implementation of PHC plan. Organize and manage the Ward System. Psychological basis of management models in health industries. It also discuss on supportive supervision, monitoring and evaluation of health services in PHC.

CHS 511 Food Hygiene And Safety (2 Units)

Introduction to the Principles of Food Hygiene and Safety. Prevent and control foodborne diseases. The use and function of food. Social function of food. Psychological function of food. Types of food; Perishable food. Non-perishable food. Wholesome food. Food hazard. Food safety. Important principles in food hygiene and safety. Prevent food spoilage. Principles of safe food preparation. Food control.

CHS 513 Epidemiology. & Control of Non-Communicable Diseases (2 Units)

The objective is to study the natural history of chronic diseases including the distribution of diseases, risk and prognostic factors, rationale and strategies for prevention. The methodological issues concerning the investigation of severe disease are discussed. This course introduces the epidemiology of cancer in its biological context and illustration of how it could be used in the search for cancer etiology and control. The role of viruses, radiation, nutrition, hormones, tobacco, occupational exposures and genetic factors in the causation of cancer would be covered. Strategies for exposure and risk assessment for cancer control including screening. Issues of design and statistical analysis in cancer epidemiology.

CHS 515 Human Resources For Health Training (2 Units)

This course will enable students to understand the concepts of continuing education in relation to his/her work. Define human resource training and self-development. List the reasons for the training of health personnel. Explain the reasons for continuing education for health workers. Explain the areas that require the development of human resources in primary health care. Identify methods for verifying the training needs of staff. Explain the following training methods: Pedagogy and Andragogy. Choose training facilities. Develop a training program. Develop a program session. Implement staff training in an identified component of primary health care. Evaluate the training done and provide feedback to other staff and employers.

CHS 517 Public Health Law (2 Units)

Some basic concepts such as definition of law, characteristics of law, purpose of law, system of law, development and classification of law and equity, sources of public health law and eminent domain, laws of nuisance. Police power, administrative law and judicial presumption, licensing,

some basic public health laws, court procedure and expert witness, informed consent, patient's right, access to care and public health, government power and individual rights.

500 SECOND SEMSTER

CHS 508 Professional Practice Paper (2 Units)

This course is meant to guide students to develop knowledge and experience, which are standard within the clinical or community health practice. It involves information-gathering procedures that are a part of the typical relationship between student and/or the patient/client/community. Identify various issues and trends in community health care. Seminar sessions, discussions, and presentations centered on knowledge of the relevant biological, social and psychological concepts and theories.

CHS 510 Monitoring And Evaluation (M&E) (2 Units)

Monitoring and Evaluation (M&E) is about collecting, storing analysing and finally transforming data into strategic information so as to make informed decisions for program management and improvement policy formulation and advocacy.

The course is design to equip student with knowledge and skills in data management, project management survey, IT project management, data collect and analysis.

It is also intended to equip students with knowledge and function of M&E plan, differentiate between conceptual frame work, result frame work, logic models and Identified criteria for selection of data indicators

CHS 512 Seminars in Community Health Non-Thesis Seminar (2 Units)

This course is designed to introduce students to write up on topical issues .Students are expected to choose topical issues in the field of community health and write a comprehensive reports on the chosen topic and present a seminar.

CHS 514 Practicum / Field AttachmentII (3 Units)

The following constitute the area of skills acquisition and instructions; Antenatal care and the use of ante partum risk assessment form, Management of labor / Use of Partograph, Abortion and Abortion Care, Use of Manual Vacuum Aspiration (MVA), Control of cord traction, Episiotomy, Use of Magnessium Sulphate in the Control of Eclampsia, Use of Misoprostol tablet in the control of Postpartum Hemorrhage PPH at community level, User Friendly Services, Cardio-Pulmonary resuscitation, Coma glow skull skill, Splinting fracture, First Aid Management, Life Saving Skills, Pre- & Post-employment Medical Examination, Occupational safety and hygiene, Screening of disability, Community & Home Services for persons with disability, Chiropody Services, Health Talk; Family Planning – Counseling on the choice of method, IUD insertion and removal, speculum examination, Pap smear, Norplant implantation and removal, Essential drugs – prepacking and distribution, Universal Safety precaution, Infusion, Conduct Outreach Services.

CHS 516 Population Dynamics and Family Planning (2 Units)

This course is design to equip the learner with the knowledge of family and population dynamics.

At the end of the course, the learners should be able to define population dynamics and population policy, reproductive health, the concept of fertility and infertility and also equipped the learner with skills of providing various method of family planning method in the clinic and community level so as reduce maternal morbidity and mortality rate.

CHS 518 Introduction to Paratasitology/Medical Entomology (2 Units)

This course is designed to introduce student to entomological techniques. Methods of insect of insect collection, Identification and Classification of insects. Vector control and prevention methods, the concept of integrated vector management. Parasite and environment, Class trematod, General characteristics, Life cycle. Human intestinal Nematodes. Epidemiology of Guinea worm, Trypanosomiasis, elephantiasis and control measures. Water Development project and infection. Tropical vector control. Epidemiology of tropical vector diseases.

CHS 599 Research Project (Project Work) (6 Units)

The students will be assigned a project topic in their area of interest in community health sciences. The research to include laboratory procedures with the view to solve either partially or completely a particular community health science identified problem.

LIST OF EXISTING ACADEMIC STAFF FOR THE PROGRAMME

NAME OF ACADEMIC STAFF	AREA OF SPECIALIZATION	QUALIFICATION	RANK
Prof. A.A. Onayade	Community Health	Ph.D	Professor
Dr. J. Daramola	Community Health	Ph.D	Associate Professor
Dr. B. S. Oloyede	Medical lab Science	Ph. D Med. Lab Sci	Associate Professor
Dr. Oladimeji Olasunkanmi	Community Health	Ph.D	Senior Lecturer
Dr. F.J. Bello	Medical lab Science	Ph. D Med. Lab Sci	Senior Lecturer
Dr. K. C. Komolafe	Molecular Biochemistry/ Biotechnology	Ph. D Biochemistry	Senior Lecturer
Dr. A.O. Agboola Alabi	Medical Biochemistry	Ph.D Medical Biochemistry	Lecturer I
Dr. A.O. Orekoya	Medicine and Surgery	MBBS	Lecturer II

Mr. O.T. Amoo	Microbial Physiology	M. Sc Microbiology	Lecturer I
Mr. F. Olatujoye	Pharmaceutical Microbiology	M. Sc Microbiology	Assistant Lecturer

LIST OF EXISTING NON ACADEMIC STAFF FOR THE PROGRAMME

NAME OF ACADEMIC STAFF	**AREA OF SPECIALIZATION**	**QUALIFICATION**	**RANK**
Mrs. Adisa Adebukola Ekoh Jolly	Medical lab Science	HND, B.MLS, M.Sc	Chief Technologist
Mr. I.A. Adelakun	Science Lab. Tech.	HND SLT (Biology/Microbiology)	Senior Technologist
Miss O.E. Omoseyin	Microbiology	B.Sc	Technologist II
Mr. S. Idiongesit	Biochemistry	HND	Technologist II
Mr. Toba Oke	Admin Officer	B.Sc	Senior Admin Officer
Mrs. Funbi Richards	Secretariat Studies	HND	Confidential Secretary

B. MLS Medical Laboratory Science

PHILOSOPHY

Medical Laboratory Science entails the study of human and animal tissues, body fluids, excretion and production of materials for the purpose of diagnosis, treatment and research. It is a branch of biomedical science that investigates the state of well-being of human, animals whose tissues or excretion are analyzed.

The broad philosophy of training in medical laboratory science (MLS) is to provide sound academic professional knowledge of medical laboratory, in order to produce medical scientists who would be capable of working anywhere in Nigeria and globally. Also to empower graduates of MLS with sufficient management ability to play leadership roles and entrepreneurship skills in employing others. The training is geared towards building competence in general laboratory practice; produce medical laboratory scientist who would satisfy internationally recognizable standards and could undertake further training towards specialization.

OBJECTIVES

The primary objectives of the bachelor of Medical Laboratory Science (B.MLS) degree are to:

I. Instill in students a sense of enthusiasm for the profession; an appreciation of its application in different contexts (in areas such as general medicine, food and beverages, pharmaceutical industries, utility departments e.g. water corporations; research institutions, etc).
II. Develop in students, the ability to apply their medical laboratory knowledge and skills to the solution of theoretical and practical problems in laboratory medicine
III. Provide students with a knowledge and skills base from which they can proceed to further studies in specialized areas involving medical sciences
IV. Develop in students through an education in medical laboratory sciences, a range of transferable skills of value in medical and non-medical employment; performing

effectively in clinical diagnostic services, academics and quality assurance, an definition independently or in collaboration with other members of the health team in the care of individuals and groups at all levels of health care.

V. Generate in students, an appreciation of the importance of medical laboratory sciences in an industrial, economic, environmental, health and social context.

VI. Empower graduates of medical laboratory sciences with skills that will enable them engage in income yielding ventures.

ADMISSION REQUIREMENT

The modes of entry are UTME and direct entry To be admitted into the B.MLS program the candidate must meet these entry requirement is as stated below:

Admission by UTME

Candidates must satisfy the minimum University requirements for Admission and are therefore to obtain credits in English Language, Chemistry, Biology, physics, Mathematics in SSCE or its equivalent in not more than two Sittings With a relevant pass in the Joint Matriculation Examination(JME) and in the post University Matriculation Examination (Post UME).

Admission by Direct Entry

i. Candidates should hold 3 GCEA/L Credit Pass or equivalence in Biology, Chemistry and Physics plus O/L credits in 5 subjects -Mathematics, Physics, Chemistry, Biology and English Language.

ii. B.Sc. degree holders in relevant science discipline like Zoology, Microbiology, Anatomy, Physiology, Biochemistry, as approved by the Senate of this University with at least second class (lower) degree.

The B.MLS degree program shall run for 5 years for UTME candidates and 4 years for direct entry candidates. The pass mark for core courses is 50% from 200L. The degree is a classified degree but without specialization.

Course outline for 100 Level Medical Laboratory Science Programme

1st YEAR

1st SEMESTER

Course	Title	Unit	Status	Lecture	Practical
BIO 111	General B1ology 1	3	C	45	-

BIO 117	General Biology Practical l	1	C	-	15
CHM 111	General Chemistry	3	C	45	-
CHM 117	General Chemistry Practical	1	C	-	15
CSC 111	Introduction to Computer Science I	3	C	30	15
GNS 111	Communication in English	2	C	30	-
LIB 111	Use of Library, Study Skills &1CT	2	C	30	-
MAT 111	Elementary Mathematics	3	C	45	-
PHY 111	General Physics 1	3	C	45	-
PHY 113	General Physics Lab 1	1	C		
	TOTAL	**22**			

1st YEAR
2nd SEMESTER

Course	Title	Unit	Status	Lecture	Practical
BIO 122	General Biology I	3	C	45	-
BIO 127	General Biology Practical 11	1	C	-	15
CHM 122	General Chemistry I	3	C	45	-
CHM 124	General Chemistry Practical II	1	C	-	15
GNS 122	Use of English II	2	C	30	-
GNS 121	Introduction to Philosophy and Logic	2	C	30	-
MAT 122	Elementary Mathematics II	3	C	45	-
PHY 124	General Physics IV	2	C	30	-
PHY 128	General Physics Practical II	1	C	-	15
CSC 122	Introduction to programming	3	C	45	-
	TOTAL	**21**			

Course outline for 200 Level Medical Laboratory Science Program

2nd YEAR

1st SEMESTER

Course	Title	Unit	Status	Lecture	Practical
ANA 211	Systemic and Functional Anatomy	2	R	30	-
ANA 212	Anatomy Practical	1	R	-	30
BCH 211	General Biochemistry	3	C	45	15
BCH 217	Introduction to Lab Biochemistry	1	C	-	30
GNS 212	Nigerian People and Culture	2	C	30	-
CHM 211	Inorganic Chemistry I|	3	C	45	-
BIO 211	Cell Biology	2	C	30	-
PIO 211	Introduction to Physiology	2	R	30	-
PIO 212	General Physiology	3	R	45	-
PIO 213	Physiology Practical l	1	R	-	30
MLS 211	Introduction to MLS I	2	C	30	-
	TOTAL	**22**			

2nd YEAR

2nd SEMESTER

Course	Title	Unit	Status	Lecture	Practical
ANA 221	Histology of Basic Tissues	2	R	30	-
ANA 222	Anatomy Practical II	1	R	-	30
ANA 223	Regional Anatomy	2	R	30	-
BCH 221	General Biochemistry II	3	C	45	15
BCH 227	General Biochemistry Lab 1	1	C	-	30
BIO 222	Biological Techniques	2	C	30	-
PIO 221	Principle of Cell Physiology	2	R	30	-
PIO 222	Physiology Practical	1	R	-	30
MLS 221|	Introduction to MLS II	2	C	30	-
MLS 222	Students' Industrial Work Experience (during vacation)	3	C	-	135
ENT 221	Introduction to Entrepreneurship	2	C	30	-
	TOTAL	**21**			

Course outline for 300 Level Medical Laboratory Science Programm

3rd YEAR

1st SEMESTER

Course	Title	Unit	Status	Lecture	Practical
ENT 311	Entrepreneurship	2	C	30	-
MLS 311	Basic Clinical Chemistry	3	C	30	45

MLS 312	Basic Medical Microbiology	3	C	30	45
MLS 313	Basic Immunology	2	C	45	15
MLS 314	Practical Exercise I	3	C	15	60
MLS 315	Basic Medical Parasitology	3	C	30	45
MLS 316	Endocrine and Reproductive System	3	C	30	45
PHA 311	Basic Pharmacology & Toxicology 1	3	C	30	45
	TOTAL	**22**			

3rd YEAR

2nd SEMESTER

Course	Title	Unit	Status	Lecture	Practical
MLS 321	Basic Haematology	3	R	30	45
MLS 322	Basic Histopathology	3	R	30	45
MLS 323	Laboratory Posting 1	3	C	30	45
MLS 324	Fundamentals of blood group	3	R	30	45
MLS 325	Public Health Microbiology	2	R	45	-
MLS 326	Chemistry and Metabolism of amino acids and Proteins (To be taken with BCH311)	2	R	45	-
MLS 327	SIWES Experience (During long vacation)	3	-	-	135
PHA 322	Pharmacology II	3	R	30	45
	TOTAL	**22**			

Course outline for 400 Level Medical Laboratory Science Program

4th YEAR

1st SEMESTER

Course	Title	Unit	Status	Lecture	Practical
MLS 411	Lab Instrumentation & Techniques	2	C	30	15
MLS 412	Medical Entomology	2	R	15	45
MLS 413	Biomedical Engineering	3	R	15	90
MLS 414	Blood Group Serology	3	R	15	90
MLS 414	Professional Ethics in Med Lab Science	2	C	15	45
MLS 416	Counselling skills	2	C	60	-
MLS 417	Clinical Chemistry 1	4	C	90	30
MLS 418	Practical Exercise l	4	C	-	135
	TOTAL	**22**			

4th YEAR

2nd SEMESTER

Course	Title	Unit	Status	Lecture	Practical
MLS 421	Medical Laboratory Hematology 1 (Hemoglobinopathy)	3	R	15	90
MLS 422	Medical Laboratory Microbiology 1	3	R	15	90
MLS 423	Research Methodology	3	C	15	45
MLS 424	Laboratory Posting I (First professional examination)	3	C	15	45
MLS 425	Laboratory Management and Organisation	3	R	30	90
MLS 426	Medical Laboratory Histopathology I	4	R	30	90
MLS 427	Analytical Chemistry	2	C	30	15
	TOTAL	**21**			

Course outline for 500 Level Medical Laboratory Science Program

5th YEAR

1st SEMESTER

Course	Title	Unit	Status	Lecture	Practical
MLS 511	General Laboratory Practice	3	C	15	90
MLS 512	Practical Exercises III	3	C	15	90
MLS 513	Seminar	2	C	-	-
MLS 514	Medical Laboratory Microbiology II	3	R	30	45
MLS 515	Clinical Chemistry II	3	R	30	45
MLS 516	Medical Laboratory Haematology III	3	R	30	45
MLS 517	Human genetics and Cytogenesis	3	R	30	45
	TOTAL	**21**			

Course outline for 500 Level Medical Laboratory Science Program

5th YEAR

2nd SEMESTER

Course	Title	Unit	Status	Lecture	Practical
MLS 521	Laboratory Posting III (Final Professional Examination)	3	C	15	90
MLS 522	Research Project	6	C	-	270
MLS 523	Medical Laboratory Haematology 1V	3	R	30	45
MLS 524	Clinical Chemistry III	3	R	30	45
MLS 525	Medical Laboratory Histopathology IV	3	R	30	45
MLS 526	Medical Laboratory Microbiology III	2	R	30	45
MLS 527	Biotechnology and Bioinformatics	2	R	45	15
	TOTAL	**22**			

COURSE CONTENT

COURSE CODE	COURSE TITLE AND DESCRIPTION	UNITS
	200 LEVEL	
MLS 211	**INTRODUCTION TO MLS I** Science: Clinical Chemistry, Haematology, Medical Microbiology, Histopathology and Immunology. Specimen Collection, Reception and Registration, Storage and Disposal. Specimen bottles, Safety precautions in pathology laboratory againstchemical, biological, electrical materials and radiation hazards. Techniques and principles of chemical sterilization and physical methods. Glass cleaning, Laboratory location and floor plan.	**2**
MLS 221	**INTRODUCTION TO MLS II** Microscopy and Microtomy Uses and care of microscopes. Refrigerators and freeze -dryers- principle, uses, care and maintenance. Handling of Laboratory animals. Laboratory location and floor plan. Laboratory organization and management. Simple analytical techniques in Chemical Pathology. Presentation of volumetric analysis, urinalysis etc. Principles of tissue preservation; fixation, processing and staining. Handling ofsurgical and autopsy specimens. Removal of formalin pigments. Basic tools of themicrobiologist wire loop, cotton wool, pipettes, swabs and their uses. Preparation of films and basic staining techniques stain. Haematological stains principles Introduction to Blood-components, formation, functions, blood groups. Gram's stain, Ziehl Neels en	**2**
MLS 222	**STUDENTS' INDUSTRIAL WORK EXPERIENCE (DURING VACATION)** Grading of SIWES Working documents (LOG Book and ITF Form 8) The SIWES working document to be graded are log book, and the Industrial Training Fund end of programme report (ITF Form 8). The technical content of the log book for twenty four weeks of the programme will be graded, also the three sections of the ITF form 8 should equally be graded. The cumulative mark from these two working documents will give the final score for the grading of the SIWES working document.	**3**
	300 LEVEL	
MLS 311	**BASIC CLINICAL CHEMISTRY**	**3**

	Traditional and S.I units in Clinical Chemistry, Reference values: Gastric function tests; Agents for Gastric stimulation. Ward procedures and Laboratory Investigation of Gastric Secretions. Intestinal function tests; Dig estion and absorption; Causes of Malabsorption. Laboratory investigation of malabsorption. Renal function tests; functions of the kidney; Measurement of Renal plasma flow, Glomerular tiltration rate, Creatinine clearance, insulin clearance, Concentration and Dilution tests; Urinary Acidification fests, urine specific gravity/Osmolarity Dye Excretion test. Water and Electrolyte metabolism. Acid base balance; Definition and causes of acidosis and alkalosis; Blood buffers. Transport of blood gases; assessment of acid/base status. Lipids; definition and types of lipids; Formation of free fatty acids, Ketone bodies and Lactate; Measurement of plasmalipids and lipoproteins. Plasma proteins and physiologic functions; factors affecting synthesisand catabolism. Me thods for the determining of total protein in serum. Carbohydrate metabolism: Blood glucose homeostasis; hyperglycaemia diabetes mellitus its causes and investigation; Hypoglycaemia - types causes and investigation.	
MLS 312	**BASIC MEDICAL MICROBIOLOGY** Scope of microbiology: Historcal approach etc. Classification and nomenclature of microorganisms. Introduction to the microbial world; Introduction to Bacteriology, Mycology Virology and Parasitology (the protozoan). Bacteriology: The general properties of bacteria, structure, growth, reproduction, requirements both environmental and nutritional. Aspects of Bacterial metabolism, bacterial genetics and variation. Sterilization in Microbiology, bacteria in health and disease: Antibiotics and chemotherapy, infection and immunity; introduction to laboratory techniques and methods including serology. Viruses: General properties, structure and biology of viruses, classification-various methods, reproduction, resistance, pathology, purification of Viruses, propagation of viruses, immunity and diagnosis of viral infection, interfèron and interference, inclusion bodies, cytopathic effects.Viral-host interactions and identification. Fungi: Morphology, groups and classification. Types of lesion and types of mycoses, growth requirements. Characteristics and general features of fungi and their diseases. Identification, and demonstration in the laboratory.	**3**
MLS 313	**BASIC IMMUNOLOGY**	**2**

	The Historical background of Immunology, classification of Immunity, innate immunity. Development and structure of cells in the Immune System, Cellular interaction, the expression and regulation of immunity, Acquired Immunity.	
MLS 314	**PRACTICAL EXERCISE I** The student is expected to carry out practical exercises in all the disciplines: **Clinical Chemistry**: Titration: presentation of volumetric analysis. Methods for chloride determnation. Determination of bicarbonate in plasma, percentage purity of carbonate. Determination of the composition of the mixture NaOH/Na2CO3, NACI/HC1, specific gravity, reactions with ferric chloride, urobilinogen, biltrubin, Indican, myoglobin, cystine, protein, Bence -Jones protein, blood, reducing substances, ketone bodies, phenyl pyruvic acid. Spectroscopy ot plasma and urine CSP analysI8 Sugar, protein. **Haematology and BGS**: Blood film, WBC count, haemoglobin estimation, Absolute values,eosinophil count, recticulocyte count. Osmotic Fragility. Blood grouping techniques, Antiserum titration, Anti -human globulin (AHG) direct and indirect, Antibody sereening. Donor screening secretor status. **Histopathology**: Preparation of fixatives, removalof formalin pigments, testing of end point of decalcitication using chemical methods. General tissue staining by haematoxylin and counterstaining with eosin. Demonstration of elastic and collagen fibres. Prussian blue reaction for iron intissues. Gram and Ziehl Nielsen (Z-N) staining methods. Use of automatic tissue processors. Microtome. **Medical Microbiology and Parasitology**: Safety precautions in the Microbiology laboratory. Getting acquainted with basic tools of microbiologist. Preparation of films and basic staining techniques, the Gram stain, Ziehl-Nielsen stain, spores, capsule and negative staining procedures. Wet preparation and microscopy, Motility tests, Media preparation and culturing. Plate reading, Demonstration of the ubiquity of micro-organisms especially bacteria from different environment. Recognition of different types of haemolysis. Sensitivity testing. Use of autoclave. Wet mount for parasites. identification of trophozoites, cysts and ova of different protozoa and helminths in stool. Thin and thick films preparation for malaria microfilaria and trypanosome parasites. Staining techniques: the Gram stain, Liehl-Nielsen stan, spores, capsule units and negative staining procedures. Wet preparation and microscopy, Motility tests, Media preparation and culturing. Plate reading Demonstration of the ubiquity of micro-organisms	**3**

	especially bacteria from different environment. Recognition of different types of haemolysis. Sensitivity testing. Use of autoclave. Wet mount for parasites. Identification of trophozoites, cysts and ova of different protozoa and helminths in stool. Thin and tnick tiims preparation for maiaria microtilaria and trypanosome parasites. Staining techniques: Giemsa, Wrights, Fields and leishman Stans. identification of Trichomonas spp, paragonimus trichuris and other helminthes and protozoa of medical importance including Schistosomes. Skin snips. Urine microscopy. Concentration techniques for stool and sputum for ova and cysts. Examination and recognition of helminthes from tissue Biopsy.	
MLS 315	**BASIC MEDICAL PARASITOLOGY** Introduction to the parasites. Classification of protozoa, (the amoebas, the ciliates, the flagellates, Nematodes. (Ascaris, strongloides, trichuris, guineaworm, hookworms, trichinella, Enterobius etc). Life cycle and pathogenicity of Cestodes. (The tapeworms, Larval forms of cestodes). Life cycle and pathogenicity of the Trematodes (The Schistosome, Fasciola, Paragonimus, etc). Methods of demonstration of parasites in blood, faeces, vagina, urine, urethra, pus from lung and liver, skin snips, etc, Mechanisms of their disease production Epidemiology and control ot parasitic diseases.	**3**
MLS 316	**ENDOCRINE AND REPRODUCTIVE SYSTEM** Endocrine glands -organization. Cellular communication by endocrine glands. Endocrine receptor, binding control of endocrine action. Endocrine glands: functions:- the hypothalamus, the pituitary, the parathyroid, adrenal cortex, adrenal medulla, the gonads and reproductive endocrinology. Foeto-placental function. Endocrine control of metabolism and endocrine diseases/disorder, water balance, insulin action, thyroid hormones and reproduction. Investigation of male and female infertility.	**3**
MLS 321	**BASIC HAEMATOLOGY** Origin, development and functions of blood cells. Synthesis and breakdown of haemoglobin. Methods of Haemoglobin estimation. Methods of cell counting. Absolute values. Introduction to homeostasIs. Prineiple and mode of action of common anticoagulants. Principle and components of Haematological stains. Simple tests used in blood coagulation. Blood films - normal and abnormal. Practical Classes.	**3**
MLS 322	**BASIC HISTOPATHOLOGY**	**3**

	Introduction to Histopathology. Fixation- Autolysis, bacterial decomposition. Effects of fixation, common fixing agents and their uses. Secondary fixation, post-fixation and post chroming and post -mordanting. Fixation pigments Decalcification- Aims and applications, decalcifying agents. Tests for clearing of decalcification. Dehydration, clearing and infiltration/embedding. Frozen and celloidin sections. Embedding media. Basic histology of organs. Principles and application of Exfoliate Cytology. Collection and fixation of specimens for cytological examination. Museum technique –colour restoration. Mounting in museum jars. Tissues and cellular injury inflammation. Healing and repairs. Gross appearance of diseased organs in routine post-mortem examination. Slide sections to illustrate common tumours.	
MLS 323	**LABORATORY POSTING 1** Students are posted to medical laboratories for on the-job training under the supervision of qualifiedmedical 1aboratory scientists for 5 days weekly for the entire semester and the whole of the longvacation. Scored log book records are kept for each student per posting	**3**
MLS 324	**FUNDAMENTALS OF BL00D GROUP** ABO and Rhesus Blood Groups, Inheritance distribution and Genetic Theory. Blood Grouping Techniques principles, disadvantages and advantages. Preparation of antisera-antiserum titration, avidity, Potency and specificity. Plant lectins -Preparation and Standardization of antisera from lectins e.g. Dolochos biflorus Anticoagulants used in BGS, ACD, CPD-CPA-A ete Modes of Action, Side effects. Blood Bottles (MRC) and Plastic Bags Advantages and disadvantages. Donor Screening - using Cuso 4 method other methods of screening. Preparation of blood products cryoprecipitate, plasma, packed cell fresh frozen plasma, fibrinogen etc cryoprecipitate. Platelet rich plasma, packed cell fresh frozen plasma, fibrinogen etc. Storage of blood and blood productsvarious methods, advantages and disadvantages Blood banking-organisation, structures, facilities and records. Blood group specific substances- synthesis, identification method(s) and application. Quality control of physical, chemical and reagent. Practical/tutorials ABO and Rhesus grouping methods, Antiserum Titration DCT and ICT antibody screening	**3**
MLS 325	**PUBLIC HEALTH MICROBIOLOGY** Meaning of health, Public Health and epidemiology, Types of outbreak Indices of Epidemiology, Patterns of Epidemiology, searching for the route	**2**

	of epidemiology, Classification of epidemiological studies, Demographic factors affecting epidemiological studies, Public health Approach, Significance of Epidemiological studies General principles of microbial disease transmission: waterborne, airborne, food borne, arthropod-borne and contagious diseases. Principles and techniques for water treatment, waste water disposal. Preventive measures in the control of bacterial, parasitic and viral infections. Vaccines and immunizations. Immunization program and schedule (EPI).	
MLS 326	**CHEMISTRY AND METABOLISM OF AMINO ACIDS AND PROTEINS** Amino acids as building blocks of proteins; the peptide bond as covalent backbone of proteins. Forces involved in the stabilization of protein structure. Protein isolation, fractionation, purification and characterization. Amino acid analysis of peptides and proteins. Methods for the determination of the sequence of amino acids in proteins. Molecular weight determination of proteins. Techniques in protein biochemistry. Oxidative degradation of amino acids and metabolism of one carbon units Ammonia toxicity and urea formation. Biosynthesis of amino acids and some derivatives; the urea cycle; metabolism of inorganic nitrogen. Disorders of amino acid metabolism.	**2**
MLS 327	**SIWES EXPERIENCE (DURING LONG VACATION)** Grading of SIWES Working documents (LOG Book and ITF Form 8) The SIWES working document to be graded are log book, and the Industrial Training Fund end of programme report (ITF Form 8). The technical content of the log book for twenty four weeks of the programme will be graded, also the three sections of the ITF form 8 should equally be graded. The cumulative mark from these two working documents will give the final score for the grading of the SIWES working document.	**3**
	400 LEVEL	
MLS 411	**LAB INSTRUMENTATION & TECHNIQUES** Instrument aspects of qualitative and quantitative analysis- theory and practice of some common analyticaltechniques: colourimetry, spectroflorimetry, flame photometry, conductometry, polarography, etc. Osmometry, Rephelometry, turbidimetry, pH Measurement by ion Specific electrodes - Separation techniques including electrophoresis,- paper, cellulose acetate, Agargel, starch and polyacrylamide gel, Isoelectric focusing. Isotaphoresis, Chromatograpy-paper, thin EayerChromatography,	**2**

	Gas Liquid Chromatography. lon exchange, gel filtration, molecular sieves; Dialysis filtration, solvent extraction, Centrifugation- Ultracentrifugation. Immunoelectrophoretic techniques, Radioimmunoassay, Competitive protein binding, Isotope dilution techniques, Enzyme Immunoassays, Receptor Assays, Automation, Micro and Ultramicro Analysis. Practical based on the above topics. Theory and practice of some common Analytical techniques including tissue processing, Microscopy and other basic Microbiological Equipment, Principles and working of haematological equipment, other applied techniques in the Medical Laboratory with emphasis on general Medical Laboratory Instrumentation. Practical exercises on the above topics.	
MLS 412	**MEDICAL ENTOMOLOGY** Arthropods of medical importance- the crustaceans, Arachnida, Hexapoda, Myiasis etc their biology, life cycles and control. Life history as disease vectors; various diseases of importance transmissible by insects. Biology of mosquito in relation to transmission of malaria, filariasis, and viral infections etc.	**2**
MLS 413	**BIOMEDICAL ENGINEERING** Workshop practice. Principles of use maintenance and repair of common apparatus and laboratory equipment. Principles of applied and general electronics. Circuit diagrams Computer programming. Improvisation. Glass blowing and construction of simple laboratory equipment. Design techniques, improvement on existing equipment. Review and modifications of laboratory methods.	**3**
MLS 414	**BLOOD GROUP SEROLOGY** Blood groups-Other blood groups eg. MNS, Duf, kell, kidd etc. Grouping techniques and antibody screening, clinical Significance, secretor status, antenatal Serology screening and titration. Compatibility procedures-different methods, advantages and disadvantages, Blood Transfusion reactions, causes and types; Investigation, Risks attendant in blood transfusion -Diseases, Anaphylactic, haemolytic and allergic reactions. Screening of Donor blood for disease agents e.g HbAgs, HIV, VDRL. Practical/tutorials. Compatibility procedures, advantages and disadvantages. Practical based on the above topics.	**3**
MLS 414	**PROFESSIONAL ETHICS IN MED LAB SCIENCE** Introduction to the Science and profession of Medical Laboratory Science. The different arms of medical Laboratory Sciences. Hall marks	**2**

	characterizing the lives of all professions, licensing to practice, group culture patterns. Justice, rights and responsibilities as a professional. The concept of duty, professional standards and Laboratory management. Authority and discipline. The use of reason. Personal relationships- inter and intra professional, Act of good faith. Place of religion in the hospital. Value Judgment, exercise of professional judgment, skill and care charge and well being of patients. Patients-professional relationship confidentiality, communication skills; trust: seeking to sate guard patients, particularly in respect to health and safety and information. Research training, professional development, knowledge and skill, quality control in the field of medical laboratory sciences and practice: Reputation. Fulfilment of professional role with integrity, retraining from IUS misuse to the detriment of patients, employers and colleagues. Medico-legal aspects.	
MLS 416	**COUNSELLING SKILLS** Definition of counselling, care and support, types of counselling: pre-test. Post-test, prevention, primary or secondary, crisis management, problem solving, decision making, couple spiritual and pastoral, who needs counselling prospect benefits of counselling, constraints in counselling; rewarding listening skills, prevention and managing conflicts, genetic counselling, including sickle cell trait in marriage, blood donation campaign, HIV infection, etc. Case studies	**2**
MLS 417	**CLINICAL CHEMISTRY1** Porphyrin, causes, symptoms and laboratory investigation of porphyrinaemia, porphyria and Porphyrinuria, Haemoglobin, synthesis, function. Glycosylated haemoglobins. Abnormal haemoglobins and haemoglobinopathies, Liver function tests. Mechanism of Enzyme action and kinetics: Clinical Enzymology: Isoenzymes in medicine, Coenzymes and Vitamins. Definition, causes, consequences and investigation of some inborn errors of metabolism; Phenylketonuria, galactosaemia fructose intolerance, Albinism, aminoacidurias, Endoerine glands and functions; the hypothalamus, the piturtary, the parathyroid, adrenal cortex, adrenal medulla, the gonads and reproductive endocrinology. Foeto-placental function. Calcium and bone metabolism. Pancreatic function tests. Basic neurochemistry, CSF- normal composition and changes in disease	**4**
MLS 418	**PRACTICAL EXERCISE 11** **Haematology and BGS**: Blood film, WBC count, haemoglobin estimation, Absolute values, cosinophil count, recticulocyte count. Osmotic Fragility.	**4**

	Blood grouping techniques, Antiserum titration. Anti -human globulin (AHG) direct and indirect, Antibody screening. Donor screening, secretor status. **Histopathology**: Preparation of fixatives, removal of formalin pigments, testing of end point of decalcification using chemical methods. General tissue staining by haematoxylin and counter-staining with eosin. Demonstration of elastic and collagen fibres. Prussian blue reaction for iron in tissues. Gram and Ziehl- Nielsen (Z-N) staining methods. Use of automatic tissue processors. Microtome. **Medical Microbiology and Parasitology**: Safety precautions in the Microbiology laboratory. Getting acquainted with basic tools of microbiologist. Preparation of films and basic staining techniques, the Gram stain, Ziehl- Niclsen stain, spores, capsule and negative staining procedures. Wet preparation and microscopy. Motility tests, Media preparation and culturing. Plate reading Demonstration o f the ubiquity of micro-organisms especially bacteria from different environment. Recognition of different types of haemolysis. Sensitivity testing. Use of autoclave. Wet mount for parasites. Identification of trophozoites, cysts and ova of different protozoa and helminths in stool. Thin and thick films preparation for malaria microfilaria and Trypanosome parasites. Staining techniques: Giemsa, Wrights, Fields and leishman Stains. Identification of Trichomonasspp, paragonimus Trichuris and other helminthes and protozoa of medical importance including Schistosomes. Skin snips. Urine microscopy. Concentration techniques for stool and sputum for ova and cysts. Examination and recognition of helminthes from tissue Biopsy.	
MLS 421	**MEDICAL LABORATORY HEMATOLOGY 1 (HEMOGLOBINOPATHY)** Iron metabolism, folate and B2 metabolism. Nomenclature,classification and investigation of common haemoglobinop athies. haemolytic anaemias, myeloproliferative disorders, lymphoproliferative disorders, haemostasis and disorders of haemostasis; investigation of bleeding disorders. Bone marrow. Practical classes.	**3**
MLS 422	**MEDICAL LABORATORY MICROBIOLOGY 1** Epidemiology of communicable diseases and disease spectrum and control. Aspects of public Health and Environmental Microbiology. Applied Microbiology: aspects of food and Industrial Microbiology. Diagnostic Microbiology. Vaccines production and immunization. Preservation of	**3**

	cultures and cultural methods. Pathogenic mechanisms of bacteria. Antibiotic assays and monitoring from body fluids etc. anaerobiosis and methods. Phage typing: Research Methods and other techniques in Microbiology. Use of metabolic path ways in identification of bacteria, fluorescent antibody methods. Quality control and Instrumentation. Practical based on the above topics.	
MLS 423	**RESEARCH METHODOLOGY** Introduction to research methodology. Collection of literature review articles Problem definition. Sampling technique Experimental designs of medical and public health studies. Questionnaire design and collection analysis. Interpretation and utilization of research findings. The role of research in health and social welfare. The need for Institutional andGovernmental ethical clearance for some research projects. Research proposals and sourcing of funding for research projects. Art of scholarly publications and Instructional design.	**3**
MLS 424	**LABORATORY POSTING I (FIRST PROFESSIONAL EXAMINATION)** Students are posted to the various laboratories for on -the- bench training in the different analytical techniques used in the Department. Students participate in the routine operation of the laboratory. Scored 1 of book records per bench are kept for each student per posting	**3**
MLS 425	**LABORATORY MANAGEMENT AND ORGANISATION**	**3**
MLS 426	**MEDICAL LABORATORY HISTOPATHOLOGY I** Students should be introduced to: Principle of histochemical methods. DNA - demonstration by Feulgen techniques. Silver impregnation methods. Genes and genetic code. Tissue culture techniques; chromosome analysis. Autoradiography. Definition and principle of organization of a medical museum. Methods of colour maintenance. Fixation and storage of museum specimens. special museum techniques e.g. Davvson's Method. Principle of Photography Preparation of stained sections for micro photography. Preparation of specimens tor preparation of stained sections for microphotography. Cytological normal cells. Histology of tissues. Atypical and malignant cells. Collection of cytological smears and processing and screening. Principles of general pathology. Systemic pathology. Gastrointestinal tract. Urogenital, cutaneous. Principle of Electron microscopy materials for electron microscopy. Respiratory -Tuberculosis. Nephropathy associated with infestations and infections. Embalming techniques and demonstrations and infections. Practical based on the topics.	**4**

MLS 427	**ANALYTICAL CHEMISTRY** Principles of analytical techniques in clinical chemistry-devising new techniques, biological trials and tests for acceptability. Solid/ dry phase chemistry, dipstick technology. Thin film technology immobilized enzymes-analytical techniques for qualitative and quantitative determination of enzymes, hormones, proteins, lipid, trace elements, non-protein nitrogen: Volumetric analysis -partition, adsorption, gel filtration, ion exchange and gas liquid chromatography. Electrochemical analysis-principles of potentiometric analysis. Fractionation of proteins- fractional precipitation (salting out), chromatographic and electrophoretic procedures. Protein precipitants-mode of action and choice in analytical procedures	**2**
	500 LEVEL	
MLS 511	**GENERAL LABORATORY PRACTICE** Theory and practice of some common Analytical techniques including tissue processing, Microscopy and other basic Microbiological Equipment use, and principles of Histological Equipment, principles and working of haematological clinical chemistry Equipment; other applied techniques in the Medical Laboratory with emphasis on general Medical Laboratory Instrumentation. Practical Classes based on the above topics. General Review and appraisals of all subjects and practice of medical laboratory sciences to be examined as a common general paper.	**3**
MLS 512	**PRACTICAL EXERCISES III** Each student carries out practical based on the Area of Major Specialty. **Clinical Chemistry** Determination of blood glucose, glucose tolerance test. Determination of calcium and phosphate; uric acid, cholesterol, creatinine clearance, electrolytes and urea, total protein albumin and globulin. Plasma protein electrophoresis. Determination of plasma enzymes:- aspartate transaminase, alanine transaminase, acid and alkaline phosphatase. Demonstration. Blood gases and pH by Astrup Technique. Paper and thin layer chromatography, Immuno-electrophoresis and agar gel immuno-diffusion techniques. Demonstration: Radioimmunoassay of hormones in blood. Estimation of 17-0xo and Oxygenic steroids in urine. Estimation of urinary buffers.	**3**

	Calculation from first principle. Absorption and calibration curves. Colour Equivalence of artificial standards. Fractional test meal. Calculi analysis. **Haematology and Blood Group Serology** Investigations in paternity dispute. Investigation of haemorrhagic and preparation of cryoprecipitate, haemolytic disease of the newborn (HDN), haemoglobinopathies, auto-immune haemolytic anaemia, enzymopathies. Preparation of anti-sera, bovine albumin, anti-human globulin. Gamma globulin neutralization test. Forensic application of Blood Group Serology. Differential leucocytes counts. Cytochemical procedures. Advanced techniques e.g. Demonstration of Iron, Foetal Haemoglobin, Ham's Test etc. **Histopathology** Special staining methods- PAS, Manson trichrome, Iron impregnation Methods. Cytological staining methods and collection of cyctological samples. Chromosome analysis. Autoradiography. Museum techniques. Cyto-screening and slide reporting. Cutting sections using the microtomes. I1sstue (cell) culturing, Fungi, amyloid, enzyme and other specialized demonstration methods. **Medical Microbiology and parasitology** Examination, culture and identification of bacteria in CSF pleural, ascitic fluid. Blood culture, High vaginal swab, wound swabs, ear, eye, nasal and other swabs. Stool bacteriology. Sputum bacteriology, Urine bacteriology. Systemic fungal culture and identification. Semen analysi1s. Special serological tests. ASO Widal, VDRL, rheumatoid factor, Complement fixation. Neutralization, haemagglutination tests for identification of viruses, General identification of miero-organisms by animal inoculation. Biochemical tests for the identification of vibrio cholera, Shigella. Candida, NeissCria	
MLS 513	**SEMINAR** Detailed literature search followed by presentation at a departmental Seminar of a scientific topic, which must be of microbiological or biotechnological interest.	**2**
MLS 514	**MEDICAL LABORATORY MICROBIOLOGY II** History of pathogenic microbiology. Host parasite relationships, sources of vectors of infection. Laboratory diagnosis and identification, immunization, serology of bacterial infections. 1'he pyogenic cocci, (staph, strep. pneumocoCCi and neisseriae). The enterobacteriaecea, coliforms, gastroenteritis, salmonellosis. shigellosis	**3**

	clholera. Vibrios, pseudomonas, bacteriodes etc), the haemophlic bacilli (haemophilus, brucellac, yersinia,	
MLS 515	**CLINICAL CHEMISTRY III** Causes and Laboratory investigation of disorders of lodine metabolism. Plasma proteins in health and disease. Definition. causes and investigation of paraproteinaemia, Bence-Jones proteinuria and significance. DiScases of muscle. Lipidaemias. Definition, causes and investigation of hyperlipoproteinacmia and hypolipoproteinaemia. Causes and investigation of nutritional disorders. Definition, causes and investigation of diabetes melitus, hypoglycemia. 1ypes. causes and features of glycogen storage diseases. Definition, Investigation and Treatment of water and clectrolyte imbalance. Homeostasis in clinical chemistry. Acid- base balance. Biotechnology-recombinant DNA. Hybriodom a. Biochemistry of neoplastic disorders. Kidney diseases, aminoacidurias. Trace elements - bioavailability function, interaction. Toxicology. Diseases of the nervous system.	**3**
MLS 516	**MEDICAL LABORATORY HAEMATOLOGY III** Ante-natal Serology: Haemolytic disease of the new born Hepatitis B antigens. Applied Blood Group Serology. Other Blood Groups. Prepar ation and standardization of AH iso-antibodies Auto Immunization- IgG. lgA antibodies. Quality Control in Serology - Advanced Techniques	**3**
MLS 517	**HUMAN GENETICS AND CYTOGENESIS** Genomic CGiene purification and amplificat 1on, polymerase chain reaction technique. Construction of genetic maps. Biotechnology- recombnant DNA, hydridoma. Theory and practice of clinical cytogenetic. Chromosomes analysis, structure, organization, and staining technique. Chromosomes in man. Normal karyotype and chromosome abnormalities. Mosaicism, trisomy, monosomy translocation. Klinefelters and tuners syndromes, Sex chromatins. Inactivation of X- chromosome and sex determinatton Genetic diseases. Clones, mapping of autosomes, DNA synthesis, gene kindred segregation. X-linked inheritance. Chumeras genes m families population. Selection, pedigree analysis, putation and mutagens, Hard Weinberg equation. genetic drift, Inbreed. Slide reporting. Philadelphia and Christ church chromosomes	**3**
MLS 521	**LABORATORY POSTING III (FINAL PROFESSIONAL EXAMINATION)** Students are posted to the laboratory of their specialty for further practical experience in Laboratory Techniques and Management for all disciplines under the supervision of Laboratory Scientists. Students participate in all the routine activities of the laboratory.	**3**

MLS 522	**RESEARCH PROJECT** A research project and dissertation to be undertaken on any topic of interest and relevance to Medical Laboratory Science	**6**
MLS 523	**MEDICAL LABORATORY HAEMATOLOGY 1V** Haemopoiesis, Haemoglobin, Haemoglobinopathies & myeloproliferations Erythropoiesis and blood. Blood cell counts in health and diseases. Blood indices. Anaemias, disorders of iron metabolism, vitamin B12 and Folate deficiencies, Haemochromatosis and related storage disorders. The spleen and splenomegaly syndromes. Drugs, chemical and the blood Haemoglobinopath, Haemoglobin genotype and phenotype. Blood in infancy, child good and pregnancy. Hereditary and blood disorders. Blood in microbial infections. Identification of blood parasites. Immunohaematological disorders. Autoimmune diseases, thrombcytopenia, leucopenia Leukemia: systemie and disseminated lupus erythematosus rheumatoid arthritis, myelomatosis and order paraproteinaemisa. Preparation and cytology of blood and bone marrow films in health and disease	**3**
MLS 524	**CLINICAL CHEMISTRY IV** Analytical Techniques. Birth of a new method, devising new techniques, Biological trials and tests for acceptability. Solid dry phase chemistry, dipstick technology, thin film technology Immobilized enzymes. Analytical techniques employed in qualitative and quantitative determination of (a) Enzymes: phosphatases, transaminases, dehyrodrogenases, Kinases (b) Hormones: catecholoamines and metabolites peptide and sterord hormones (C) Proteins: total proteins albumin and globulin, specific proteins (d) Lipids: cholesterol, triglycerides, glycerol, fatty acids and lipoproteims. (e) Trace elements Fe, Cu Zn, Mg, Selenium (0 Non-protein nitrogen -Urea, creatinine, creatine, uric acid, amino acids and ammonia Urinalysis; determination of urine specific gravity, osmolarity; qualitative tests for protein, glucose., and reducing substances, Ketone bodies, bilirubin urobilinogen and blood. Haemoglobin and haemoglobin derivatives in urine. Spectroscopy of haemoglobin and its derivatives in blood and urine.	**3**
MLS 525	**MEDICAL LABORATORY HISTOPATHOLOGY IV** This course exposes the students more in general Cytology Histology pathology, control of results and management of Histopathology laboratory. More facts of Electron microscopy and Autoradiography are highlighted. Cytology of cells. Epithelial cells and tissues, atypical and malignant cells. Gynaecological cytology. Hormonal evaluation. Cells and other constituents,	**3**

	sputum. Effusions, Urine and other fluids. Cytological fixatives and stains, cyto-screening. Principles of general pathology applied to individual organs. Systemic Pathology. Hypertensive heart disease, heart failure and cardiomyopathies. Respiratory-Tubereulosis. Nephropathy associated with infestations and infections. CNS, special senses. Malignant lymphomas, liver -cirrhosis. Liver cell carcinoma, Hepatitis virus. Electron microscopy-preparation of materials for electron microscopy, Embedding reagents Used in Electron microscopy. Techniques involved in autoradiograph. Laboratory Management. Quality control and automation in histopathology laboratory	
MLS 526	**MEDICAL LABORATORY MICROBIOLOGY III** General characteristics of fungus diseases, types of mycoses and properties: opportunistic fungi Diagnosis and chemotherapy. Systemic mycoses (cryptococcosis, blastomycoses, histoplasmosis, coccidioidomycoses).Opportunistic mycoses (candidiasis, phycomycoses,aspergilloses etc), subeutaneous mycoses, (e.g. maduromycoses, sporotrichoses, chromoblastmycosis, etc Cutaneous mycoses dermatophytoses. Superticial mycoses etc. General properties, pathogenesis, diagnosis. Epidemiology and control and recognition of fungi. Dermatropic and viscerotfropre viruses. Smallpox, cowpox and vaccination, measles, nubella, chickenpox and shingles, Herpes viruses. Yellow fever, Lassa fever. Hep A and B, influenza, arbo viruses. The neurotropie viruses (rabies. poliomyelitis, encephalit, lymphocytic choriomeningitis virus, mumps viral transformation and types of tumors and viruses. Oncogene theory etc. Viral gastroenteritis, Miscellaneous viruses.	**2**
MLS 527	**BIOTECHNOLOGY AND BIOINFORMATICS** General preparation and storage of reagents for diagnostic use. Preparation and purification of antibody and antigen for diagnostic tools, Monoclonal and polyclonal antibodies. Concepts of vaccination, Preparation, purification and storage of vaccine. Introduction to Mathematical and Computational Genomics: Its application to medicine in general and laboratory diagnosis specifically.	**2**

LIST OF EXISTING ACADEMIC STAFF FOR THE PROGRAMME

NAME OF ACADEMIC STAFF	AREA OF SPECIALIZATION	QUALIFICATION	RANK
Dr. O. O. Bello	Medical Microbiology	Ph. D Microbiology	Associate Professor
Dr. B. S. Oloyede	Medical lab Science	Ph. D Med. Lab Sci	Associate Professor
Dr. F.J. Bello	Medical lab Science	Ph. D Med. Lab Sci	Senior Lecturer
Dr. K. C. Komolafe	Molecular Biochemistry/ Biotechnology	Ph. D Biochemistry	Senior Lecturer
Dr. B. A. Kelly	Environmental Microbiology	Ph. D Microbiology	Senior Lecturer
Dr. A.O. Agboola Alabi	Medical Biochemistry	Ph.D Medical Biochem	Lecturer I
Mr. O.T. Amoo	Microbial Physiology	M. Sc Microbiology	Lecturer I
Mr. F. Olatujoye	Pharmaceutical Microbiology	M. Sc Microbiology	Assistant Lecturer

LIST OF EXISTING NON ACADEMIC STAFF FOR THE PROGRAMME

NAME OF ACADEMIC STAFF	AREA OF SPECIALIZATION	QUALIFICATION	RANK
Mrs. Adisa Adebukola Ekoh Jolly	Medical lab Science	HND, B.MLS, M.Sc	Chief Technologist
Mr. I.A. Adelakun	Science Lab. Tech.	HND SLT (Biology/Microbiology)	Senior Technologist
Miss O.E. Omoseyin	Microbiology	B.Sc	Technologist II
Mr. S. Idiongesit	Biochemistry	HND	Technologist II
Mr. Toba Oke	Admin Officer	B.Sc	Senior Admin Officer
Mrs. Funbi Richards	Secretariat Studies	HND	Confidential Secretary

B. NSC Nursing: 5 Year Degree Programme Curriculum

The philosophy of the nursing profession takes cognisance of the philosophy of education in Nigeria.

1. The Nursing profession believes that: man is a bio-psycho-social being and his needs are the focus of all nursing activities. Man is a member of a family and families make up communities.

2. The health care system exists to meet the needs of the consumers of health care by providing primary secondary and tertiary health maintenance activities to ensure that individuals, families, group and communities are assisted to maintain a high level of wellness. The profession endorses the Alma Mata declaration which states that primary health care is the key to the attainment of health for all by the year 2,000 A. D. and beyond.

3. The human environment is a major factor in man's health status. It is therefore necessary to conceptualize the individual and the environment as open systems engaged in continuous, dynamic interaction.

4. University education is the key to the growth of a profession. Optimal professional nursing education can be achieved in an institution of higher that provides a foundation for general education in the various sciences and arts.

5. Nursing is a science based on the knowledge to behaviour that enable changes in the client system to be monitored by utilizing the scientific method of inquiry whilst providing nursing intervention to individuals, families, groups and communities at the primary, secondary and tertiary level of health care.

6. Professional nursing education is built upon a theoretical base that seeks to develop continuous self directed practitioners who will advance and test knowledge in which practice is based. Current health care demands, require an innovative approach in professional preparation, and a curriculum that is responsive to the changing health needs of the society.

Curriculum Objectives

By the end of the academic programme in nursing, the undergraduate is expected to:

1. Integrate concepts and principles from the biological social, physical and nursing sciences in the provision of comprehensive nursing care to individuals, families groups and communities.

2. Function effectively independently and in collaboration with other members of health and related sectors in the care of individuals and groups in the community and health institutions.

3. Utilize the nursing process and other tools of nursing in assisting individuals families and groups adapt to changing health needs.

4. Formulate a theoretical framework that is applicable to the nursing care of clients at the three levels of health care by using tennets from relevant sciences.

5. Incorporate the medical plan of care into nursing activities to achieve the objectives of the dependent, inter-dependent and independent function of the nurse.

6. Contribute to the improvement of nursing practice by participation in interdisciplinary research, utilizing the research process and publishing research findings in nursing practice situations.
7. Appreciate the influence of culture and habits on the health status of clients and utilize this knowledge in developing skills

8. Utilize the principles of management in the administration of health care facilities personnel.

Competencies of the Graduate

By the end of the academic programme, the graduate will:

1. function dependently, inter-dependently and independently at the three levels of care, giving high quality nursing services to clients utilizing the tools for nursing practice.

2. demonstrate subject clinical skills in the implementation of care using knowledge derived from the physical social biological and nursing sciences.

3. maintain quality assurance and uphold accountability in professional practice.

4. plan and implement formal and informal teaching for clients and other health personnel.

5. function in an expanded role within the health team managing human and material resources

6. initiate and implement nursing research, utilizing research findings to improve nursing practice.

7. demonstrate an appreciation for the need for improving self and others through active participation in continuous education programmes.

ADMISSION REQUIREMENT

To be admitted to the B, NSC degree course candidates must have satisfied the prescribed minimum conditions of the university for admission to the degree course, and fulfill the requirements of direct or concession entry.

(a) Direct Entry - Candidates holding the General Certificate of Education Advanced Level (for approved equivalent) in Biology or Zoology, Chemistry and physics plus Ordinary Level Credits in five other subjects including Mathematics, Physics, Chemistry, Biology and English Language or R.N.C and five subjects at O/Level which include English, Mathematics, Biology, Physics and Chemistry at not more than two sittings.

(b) Candidates holding the Senior Secondary School Certificate with credit & passes (or approved equivalent) in 5 subjects including English Language, Mathematics, Biology, Physics and Chemistry plus an appropriate pass in the Joint Matriculation Examination.

DURATION OF COURSE

The duration of the B.NSC degree course is 5 years for Joint Matriculation Examination Entry Candidates and 4 years for Direct Entry Candidates.

OUTLINE OF CURRICULUM FOR B.NSC PROGRAMME

Course Code	Course Title	Semester Units		Status
	100 Level			
FSC 101	Introductory Biology	3		C
FSC 102	Introductory Chemistry I	3		C
FSC 103	Introductory Computer Science	2		C
FSC 104	Introductory Mathematics	3		C
FSC 105	Introductory Physics I	3		C
GSP 101	Fundamental Biblical Doctrines	2		C
GSP 102	Use of English	2		C
GSP 104	Nigerian Peoples and Culture		2	C
GSP 110	**Introduction to Logic**		2	C
NUR 101	Foundations of Nursing		2	C
NUR 102	General Economics	2		C
NUR 103	Introductory Sociology		2	C
NUR 104	Biostatistics		2	C
NUR 105	Human Anatomy		5	C
NUR 106	Human Physiology		5	C
NUR 107	Development Psychology		2	C
	TOTAL UNITS (42)	**20**	**22**	
	<u>200 Level</u>			
ANM 201	Basic Anatomy I	3		C
ANM 202	Basic anatomy II		3	C
PHY 201	General and Human Physiology	3		C
BCH 201	Introductory Biochemistry I	2		E
BCH 202	Introductory Biochemistry II		2	E
GSP 203	Introduction to Ethics		2	C
BIO 201	Cell Biology	3		C
BIO 202	Developmental Biology		3	C
BIO 203	Invertebrate Biology	3		C
BIO 204	Vertebrate Biology		3	C
BIO 210	Biological Techniques		3	C
MIC 201	Introductory Microbiology I	3		C
CHM 202	Basic Physical Chemistry		4	C
CHM 203	Basic Organic Chemistry	4		C
CHM 205	Experimental Chemistry II		2	C
	TOTAL UNITS (43)	**21**	**22**	
	<u>300 Level</u>			
NUR 301	Man, the family & Community	2		C
NUR 302	Environmental Health	2		C

NUR 303	Sociology II	2		C
NUR 304	Community Health Nursing I	5	5	C
NUR 305	Pharmacodynamics & Chemotherapy		3	C
NUR 306	Nursing ethics & Philosophy		3	C
NUR 307	Fundamentals of Human behaviour	2		C
NUR 308	Medical Surgical Nursing I		5	C
NUR 309	Nutrition	3		C
NUR 310	Epidemiology	2		C
BCH 307	Techniques in Biomedical Research		2	E
BCH 308	Basic Immunology		2	E
BCH 309	Introductory Molecular Biology		2	E
MAT 317	Statistics For Biologist	3		C
	TOTAL UNITS (43)	**21**	**22**	
	400 Level			
NUR 401	Mental Health and Psychiatric Nursing I	5		C
NUR 402	Maternal & Child Health Nursing I	8		C
NUR 403	Medical-Surgical Nursing II		8	C
NUR 404	Research Methodology		3	C
NUR 405	Principles of Education	2		C
NUR 406	Teaching Methodology	1		C
NUR 407	Management of Nursing Care Services		2	C
NUR 408	Practicum in Teaching & Management		2	C
NUR 409	Community Health Nursing		3	C
BCH 414	Biochemistry of Parasites	2		E
BCH 416	Biochemistry of selected Organs and Tissues	2		E
GSP 404	History of Science and Technology		2	C
	TOTAL UNITS (40)	**20**	**20**	
	500 Level			
NUR 501	Community Health Nursing III		5	C
NUR 502	Mental / Psychiatric Nursing II	5		C
NUR 503	Maternal & Child Health Nursing II	5		C
NUR 504	Nursing Seminar	3	3	C
NUR 505	Research Project	5	5	C
	2nd Semester Electives (Select One)			
NUR 506	Intensive Care Unit Nursing		12	E
NUR 507	Primary Health Care Nursing		12	E
NUR 508	Orthopaedic Nursing		12	E
NUR 509	Opthalmic Nursing		12	E
NUR 510	Operating Theatre Nursing		12	E
	TOTAL UNITS (43)	**18**	**25**	

Key: C = Compulsory E = Elective

COURSE DESCRIPTION

ZOOLOGY - 3 UNITS

This course is designed to explore the structural and function of animals and to extrapolate to humans relevant findings. It includes animal cabryology, development and matabolic physiology. Animal physiology covers the physiology of animal's with backbones and those without backbones.

Animal Physiology

- General principles of physiology process
- Regulation of body temperature, body weight, blood pressure, respiration fluid, hormones.
- Normal function of sex determination
- Sex Chromosomes, cytrogenetic effects of radiation and chemical agents.

Metabolic Physiology

- Metabolism of carbohydrate, lipids, protein, amino acids and nucleic acid.
- Breakdown and synthesis of proteins and amino acids.
- Breakdown and synthesis of protein and amino acids.
- Control mechanisms, intercellular control and hormonal control
- Further consideration of metabolic enzymes and kinetics.

PHYSICS - 3 UNITS

The course describes fundamental principles of mechanics and assists the student to apply pertinent principles in the provision of effective nursing care. Matter -solids, liquids and gasses, surface tension capillary and diffusion. Gas law, relationship between volume and pressure. Flow in liquid and gases. Elementary machinics-measurements force, work energy. Lever and pulleys-application, fractures, physiotherapy. Density and applications in hospital specific gravity - hydrometer, urinometer, caliberations uses and faults. Pressure-Barometer, Application, blood pressure measurement, Heat-Temperature, types of thermometers, temperature conversion, heat as a form of energy, heat content of forces, calories, simple calculations. Optics-light, basic principles-application, Eye, lenses and glasses as applied to common eye defects. Electricity-Basic principles. X-ray. Magnetism - Magnetic substances, properties, field of force.
This course deals with the chemistry of important biology compounds stressing bio-genesis and reaction mechanism, Introduction to Chemistry, Historical background Electronic structure of atoms: Experimental basis, General Physical Chemistry Dilute solutions, Chemical physical properties of ionic solutions. Strong and weak electrolytes. Definitions of acids and bases. Acid-bases reactions of salts, buffer solutions.

GENERAL ORGANIC CHEMISTRY

Irons in solutions, Solubility and hydration, Preparation and reactions of the following classes of compounds: Alcohols, ethers, ketones, alkenes, ammonium salts, suphonic acid. Salt, carbohydrates, fats and oils.

MATHEMATICS - 2 UNITS

The course is designed to enable the student acquire knowledge of general mathematics necessary for mathematical calculations in the practice of nursing. Numbers-Natural numbers,

intergers, rationals number bases, operational with surds, ratio, proportion and percentage.

Graphs
The Cartesian plane, plotting of a graph from a table of values and graphical treatment.

Geometry:
Angles, and parallel line construction loci, angle properties of circle, maturation, perimeter circumference, surface area, volume.

BOTANY - 3 UNITS
The course is designed to familiarize the student with activities of living things, the cell its general structure and activities, viruses, Chromosomes, prokanyotic and ukayotic cells. The fungi and algae etc. General structure, anatomy and physiology of the stem, root, leak and flower and floral diversity.

The Role Plant Breeding
- Structure methods
- Breeding for disease
- Inheritance of disease and human resistance

Applied Plant Physiology
- Structure and actions of herb persistence and destruction of herbicides.
- The physical properties of water and their biological significance.
- The chemical composition of waters, water pollution.

ZOOLOGY - 3 UNITS
This course is designed to explore the structure and function of animals and to extrapolate to humans relevant findings. It includes animal cabryology, development and metabolic physiology Animal physiology covers the physiology of animal's with backbones and those without backbones.

Animal Physiology
- General principles of physiological process
- Regulation of body temperature, body weight, blood pressure, respiration, body fluid, hormones.
- Breakdown and synthesis of proteins and amino acids.
- Control mechanisms, intercellular control and hormonal control]
- Further consideration of metabolic enzymes and kinetics.

CHEMISTRY - 3 UNITS
This course deals with the chemistry of important biology compounds stressing bio-genesis and reaction mechanism)

Introduction to Chemistry
Historical background, Electronic structure of atoms: Experimental basis.

General Physical Chemistry
Dilute solutions, Chemical physical properties of ionic solutions, Strong and weak electrolytes,

Definitions of acids and bases, Acid-bases reactions of salts, buffer solutions.

GENERAL ORGANIC CHEMISTRY
Ions in solutions, Solubility and hydration, Preparation and reactions of the following classes of compounds: Alcohols, ethers, ketones, alkanes, ammonium salts, suphonic acid. Salt, carbohydrates, fats and oils.

MATHEMATICS - 2 UNITS
The course is designed to enable the student acquire knowledge of general mathematics necessary for mathematical calculations in the practice of nursing. Numbers-Natural numbers, intergers, rationals numbers bases, operational with surds, ratio, proportion and percentage. Graphs:- The sartesian plane, plotting of a graph from a table of values and graphical treatment.
Geometry: Angles, and parallel line construction loci, angle properties of circle, mesuration, perimeter circumference, surface area, volume.

BOTANY- 3 UNITS
The course is designed to familiarize the student with activities of living things, the cell its general structure and activities, viruses. Chromosomes, prokanyotic and ukayotic cells. The fungi and algae etc. General structure, anatomy and physiology of the stem, root, leak and flower and floral diversity.

The Role of Plant Breeding
- Breeding methods
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- Structure and actions ofherhicdes persistence and destruction of herbicides.
- The physical properties of water and their biological significance.
- The chemical composition of waters, water pollution.
- Economics 2 units

FACTORS INFLUENCING THE DISTRIBUTION OF PRODUCTIVITY.
Introduction to the notion of social, welfare. The problems of production, Scarcity, choice and opportunity cost, The circular flow of income and the concept of national income, its measurement and determinations, poverty.

SOCIOLOGY 1-2 UNITS
This course is designed to introduce the student to sociological concepts and theories. It examines the nature of society, social stratification and the relevance of the study of sociology in relation to health and illness states. Introduction to sociology concepts, definitions history sociological research. Roles, norms socialization, culture and social process. Conformity and social control, social institutions, Politics, Religion, Kinship. Economy and education, social mobility.

Foundations of Nursing 3 Units
The course provides a foundation of concepts, theories and principles which enables the student

understand and integrate the content that is the composite of nursing as a science and an art. Introduction to professional Nursing, Meaning of Health and illness. Nursing as it relates to health care. Social and Cultural set up, Concepts and trends in Nursing Interpersonal relationships in Nursing, Ethics and philosophy of Nursing, Concepts of Primary Health Care, Components of Primary Health Care, Care of Client, Comfort and Safety measures, Diagnostic measures, Health Education, The Nursing process and the utilization of scientific principles in the practice of Nursing, Philosophy of Nursing, Physical assessment, Theoretical basis for nursing practice.

Biostatistics - 2 units
The course introduces the student to the statistical process and various statistical methods in common use. It deals with the collection, compilation, analysis, concepts of probability, distribution and density. Basic inference about population, mean estimation and test on large and small samples.

Human Anatomy - 5 units
The course examines the functions of the human body in relations. Head and Neck, Neuroanatomy and body systems.

Human Physiology - 5 units
The course examines the functions of the human body in relation to cells, tissues, membrane glands and organs. Introduction to Physiology, Physiology of Excitable tissues, Physiology of Blood and cardiovascular system, Respiratory physiology, Metabolism, Skin, Temperature regulation, Physiology of digestive system, Kidney, Endocrinology and Reproduction, Central and Peripheral nervous system, Special senses.

Development Psychology - 2 units
Emphasis in this course is on development from conception through childhood adolescence. Theories of learning, Psychology of Education and the nurse, Human growth and development, The nature and structure of intelligence, Individual difference, Determinants of the health behaviour.

Biochemistry - 3 units
The course deals with the chemistry of important biological compounds stressing their biogenesis and reaction mechanism. Introduction to Biochemistry introductory kinetics and energetic. Chemistry of proteins and enzymes.
Chemistry and metabolism of carbohydrates
- Lipids
- Vitamins as co-enzymes
- Integration of metabolism
- Oxidation
- Nucleic acids
- RNA and protein synthesis
- Diet
- Food value
- Vitamin deficiency

MEDICAL MICROBIOLOGY AND PARASITOLOGY - 3 UNITS
The course covers the study of the characteristics and classification of micro-organisms. It enables the student identify infective agents that cause disease in man and to apply the knowledge of disease processes in terms of personal and communal health. Introduction to Microbiology, Characterization and classification of characteristics of bacteria Morphology, physiology, reproduction, pathogencity and virulence, exo and endotoxins, Susceptibility and resistance to infection, Natural resistance, phagocytosis antibodies, Natural and acquired immunity, immunization - active and passive, anaphylaxis, hypersensivity and allergy, Control of micro-organisms, sterilization, disinfection, Chemotherapeutic agents, Antibiotics.

AFRICAN HISTORY AND CULTURE - 2 UNITS
The course deals with the values, norms and culture of Africa and the Nigerian Society in particular. It emphasises role of culture in the behaviour of Africans. The African Society, development, migration, large and small rural movements and its effect on man and disease control of population and population dynamics. The Nigerian Society and disease: rural and urban society; changing patterns of disease in rural and urban societies. The role of affluence social habits and educational status.

GENERAL AND CELLULAR PATHOLOGY - 3 UNITS
The course covers general mechanisms, the pathogenesis of disease and the dynamic of disease as it evolves from its incipient stage to its full expression. The effect of disease on organs and distant parts of the body are discussed, Pathology and the nature of disease, Chemistry of cell damage and the dying cell, Inflammatory response and chemical mediators, Immunity and cellular immune response, Principles of repair and re-organization of cell structure.

POLITICAL SCIENCE - 2 UNITS
The course introduces the student to social organization and mechanisms of government. It stresses the needs and problems of politics as they affect Nigeria, Africa and the health professions. Introduction to political science and African Politics Dependence, struggle for independences of African States. Politics in Africa as it affects the development of African people and the health profession. Nigerian politics as it affects Nursing profession. Elements of Administration, rule of law, role of the executive, legislature and the judiciary. Political parties and pressure groups, The role of the media.

EPIDEMIOLOGY - 2 UNITS
The course introduces students to the principles and methods of epidemiology as they apply to the study of communicable disease. Principles and methods of epidemiology: epidemiological Studies. Control and nursing care of communicable and non communicable diseases. Community surveys, screening, and health appraisal.

MAN, THE FAMILY AND COMMUNITY - 2 UNITS
The course is designed to enable the student acquire knowledge of the socio-cultural development of man, the family and the community, it emphasises the interaction between the community and the environmental forces that affect health. The importance of culture, the family and kinship is considered in the evaluation of population dynamics. The individual, family community and civilization. Culture, race, ethnicity and communication.

Environment: rural urban, demography and population dynamics,. The role of the nurse in

demographic data collection.

Fertility: Family type and size.

Mortality: life expectancy, illness, death and the dying. The germ teory as it relates to the concept of disease patterns of life in the community and its relationship with disease. Health protection, life patterns and disease states. Diagnostic tests in health assessment.

ENVIRONMENTAL HEALTH - 2 UNITS

The course is designed to examine the effect of environmental factors on the health of the community, community assessment and action to improve the quality of the environment is emphasized, Man and his physical environment, Environmental factors that affect health; noise; gas pollution waste products; air, water, Environmental sanitation: waste disposal, vector control, Housing water supply, Food hygiene, Environmental health. Relationship of occupation to environmental: factors, Rural Urban migration.

SOCIOLOGY II - 2 UNITS

This course is designed to build upon the content covered in sociology I. It considers the sociological perspectives of society, social institutions and complex organisations. It emphasized the role of man is functioning member of society. Social interaction, social relations as basis for the development of social life, The role culture, beliefs and taboos, Traditional society, modernization and urbanization Social problems and social welfare services.

COMMUNITY HEALTH NURSING 1 UNIT

The course utilises the provision of community health care, Application of principles of epidemiology is emphasised in the maintenance of optimum wellness, The social systems theory, Analysis of the family and significant, Assessment of me community - environmental and community health services, Philosophy, components and principles of primary health care, The role of the nurse in primary health care settings, Development of physical assessment skills, Assessment of the family, The interrelationship of social and physical environment on health.

PHARMACODYNAMICS AND CHEMOTHERAPY - 3 UNITS

The course is designed to enable the student acquire the knowledge of the derivation, action and functions of drugs on the systems of the body. It considers problems of drug therapy and the contributions of traditional Chemotherapeutic measures to health maintenance.

Drugs: Derivations and standardisation, classification of drugs dosage, administration, and body's reaction to drug therapy, principles of therapy, prophylaxis and control of bacterial, parasitic and viral infections. Chemotheraphy for parasitic infections, Therapeutic drugs and their action on cells, Diet therapy, toxicology and drug abuse, Nurses role in drug therapy.

NURSING ETHICS AND PHILOSOPHY - 3 UNITS

This course is designed to enable the student identify nursing ethics as a component of medical ethics in her practice as a member of the health team. It introduces the student to the status and common law as they affect the nursing profession and nursing practice. It enables her to develop a personal philosophy of nursing. Philosophy of Nursing practice, Foundation of Nursing Ethics (National and International) Nursing ethics in Nigeria (Problems and prospects), Laws and regulations governing nursing practice in Nigeria ethical considerations and dilemmas, Nursing ethics as it relates to the health team, ethical/moral principles, Professional ethics and constraints

imposed by institutions, The health care system and individual rights: informed consent, abortion, dying and death, behaviour Control, Discussion of ethical dilemmas, The nurse as an advocate.

FUNDAMENTALS OF HUMAN BEHAVIOUR - 2 UNITS

This course is designed to enable the student acquire the knowledge of a socio-psychological determinants of health behaviour. It enables her initiate compliance behaviour by utilizing the principles guidance and counseling. Human development, culture factors and behaviours beliefs, taboos and behaviour in health and illness, The health-illness continuum.

The socialization process:

Development of personality and character formation; role identify and role function. Patterns of marriage and childrearing practices group dynamic: Leadership, group norms, interpersonal relations, communication. Principles and technique of guidance and counselling.

MEDICAL SURGICAL NURSING I -5 UNITS

The course is designed to enable the student acquire indepth knowledge of medical surgical problems and to identify her role as a professional nurse in the care of adults and children with medical - surgical problems in the primary, secondary and tertiary settings of the health care. Experience is provided in the care of selected individuals and families to facilitate the transfer of theory to nursing practice situations. Theoretical models of care are emphasized. Pathophysiology of medical-surgical problems. Emensions of nursing practice, the nursing process levels of health care. Theories, concepts and principles of care: application of theoretical models of care, theories of illness discussion of care studies on selected medical-surgical problems.

NUTRITION - 3 UNITS

The course discusses the historical perspectives of nutrition as a science. The nutritional values of and its studies on health is emphasized. Food purchasing presentation, preparation and diet therapy are studies to enable the students provide well diets to clients and patients. Historical perspectives, Nutrition as a science, Nutrition of food and their nutrients, relationship of digestion and absorption of food, Nutrient quality of local foods and diets, Election and formulation of balanced and weaning diets, Use of food composition tables, Nutrient requirements and recommended daily calory requirements, Food in relation to the life cycle, Dietetics and diet in illness.

MENTAL HEALTH AND PSYCHIATRIC NURSING I -5 UNITS

This course enables the student to relate the knowledge of growth and development to mental health disorders and behavioural problems. It encourages her to develop an awareness of acceptance of the behavoural changes of the mentally sick. The legal aspects of psychiatric nursing and the nurses role stressed. History of mental health movement, national and international. Growth and development theories, relationship of growth and development of behaviour. Classification of mental health disorders, discussion of specific behaviours, Intervention by health providers: individual and group approach, therapeutic care, behaviour management, Nurse's role: legal coverage.

MATERNAL AND CHILD HEALTH NURSING I -8 UNITS

The course deals with the health of the family during its child bearing and child rearing years, etc emphasizing the needs of the mother and the new born during the maternity cycle, the role of the in the family planning and genetic counselling. History of maternal and child health nursing: National and international, The reproductive phase of the life cycle, Obstetric and Gynaecological conditions, Family planning and family health, Application of the eight tenets of primary health care, Child Welfare and School health programmes, Domiciliary midwifery practice. Family health care, Field work - 6 weeks. Health care institutions practice.

MEDICAL - SURGICAL NURSING I - 8 UNITS

The course is designed to build upon the content covered in Medical-Surgical Nursing 1 and to expand the knowledge based on disease processes as they affect the systems of the body. Concept of compular, growth and proliferation, medical, care scientific nursing management of client/patient with specific acute and chronic ailments. Dynamics of fluid and electrolyted balance. Concept metabolism: disturbances ofingestion, digestion and elimination. Hepatic function glucose metabolism and hormonal disturbances. Concept of oxygenation and disturbances of oxygen carry mechanism, blood pumping mechanism and blood vessel distribution. Concept of perception and ordination. Vascular and inflammatory disturbances. Nurse's role in the operating theatre intensive care ward and clinic situation.

RESEARCH METHODOLOGY - 3 UNITS

The course is designed to create an awareness of and the need for research as a means for improved nursing care. The student is assisted to acquire the basic skills and knowledge required of a research in health and social welfare. Institution versus, problem solving and the scientific approach. Research designs. Application of principles of data collection; analysis and interpretation. Interpretation and utilization of research findings. Utilization of research methodology for individual and group research projects. Review of selected studies in the health care industry.

PRINCIPLES OF EDUCATION - 2 UNITS

This course is designed to introduce the student to the principles of education and educational methodology. It stresses role of the student as a teacher and health educator. Principles of education, principles of Teaching/Learning philosophy and objectives of education in Nigeria. Relationship of the national policy and philosophy on education to the education of nurses. Qualities of a teacher/Learner interaction. The learning environment. The learner. Deductive and inductive reasoning. Concepts of motivation methods of evaluation.

TEACHING METHODOLOGY -I UNITS

The course introduces the student to the principles of teaching and learning. It provides the foundation in the acquisition of knowledge and skill for effective teaching in the class-room and clinical situations. Application of selected theories of learning. Traditional and International teaching methods as they apply to health education. Educational communication media. Development and implementation of teaching plans in clinical settings.

MANAGEMENT OF NURSING CARE SERVICES - 2 UNITS

The course is designed to introduce the student to the philosophy, theory, principles and techniques of management as they relate to nursing care services. Essential tools for the management of nursing care and the evaluation of response to care will be discussed.

Introduction to management: Philosophy, purpose and objectives. The health care delivery system: National and International). Tools of management. Communication and interpersonal relationship. Interviewing skills. Concepts of guidance and counselling. Elements of nursing management. Standards of Nursing practice. Management of human and material services. Budgeting and staffing. Supervisory process. Concepts of evaluation of clinical settings. Accountability and the role of research practice.

FUNCTIONS OF TEACHING AND MANAGEMENT - 2 UNITS
The course enables the student to utilize the principles and techniques of teaching and management health care settings. Opportunity is given for health education at the primary, secondary tertiary levels of health care.

COMMUNITY HEALTH NURSING II: 3 UNITS
The course is designed to expose the students to a period of concentrated clinical practice in the community. The care of families will form the care of practice.

COMMUNITY HEALTH NURSING III: - 5 UNITS
Advanced community health concepts and their application to health care practice in different community discussed, Case studies are developed and presented at seminar sessions. This course is a follow-up into community nursing II.

Health Nursing I & II:
Community health nursing and its integration into health system. The role of the community Health Nurse. Meeting the health needs of the community. The handicapped and social drop problems of the aged. Health education. Occupational health nursing. Health administration in community. Organisation and co-ordination of community health services. The use of the stand order.

MENTAL/PSYCHIATRIC NURSING II-5 UNITS
The course deals with preventive aspects of mental health and involves the roles of traditional health as they affect the mental/psychiatric disease interpretation in urban and rural settings. The role the mental/psychiatric health care in schools, industries and homes. The nurse as a the apeutic Social issues affecting the nature of mental illness. Research and mental/psychiatric health, health, culture and the Nigerian society.

MATERNAL AND CHILD HEALTH NURSING II-5 UNITS
This course is designed to enable the student transfer the theoretical knowledge of maternal and health nursing growth and development. Child health and genetics to practice settings. Family studies are essential. Domiciliary Midwifery Practice.

Immunization: Expanded Programme on Immunization, Oral Dehydration Therapy. Physical assessment, nursing diagnosis, the use of standing order and implementation of nursing intervention. Family planning and post natal exercises. Health education the monitoring of growth and development.

NURSING SEMINAR - 3 UNITS
The course is designed to enable students identify issues and trends in nursing and health care

depth knowledge is derived through literature review and interaction with members of the team. Care studies will also be presented.

RESEARCH PROJECT-5 UNITS
Students are guided in the development, execution and writing of their research project.

Elective-12 units
Each student decides on a clinical area of special interest for in depth study and practice. Application of theoretical knowledge is emphasized.

Teaching Methods
The objectives of the B.NSC degree course will be achieved by the use of:
1. Didactic and interactional teaching methods
2. Client/patient care study.
3. Family care study
4. Clinical practice
5. Guided field visits
6. Teaching management practice in clinical settings.
7. Lectures/Tutorials/Laboratory and Clinical demonstrations Evaluation

Evaluation deals with 3 aspects of the B.NSC course.
1. Student
2. Course evaluation
3. Programme Evaluation.

Student evaluation: the methods of evaluation used are:
Continuous Assessment: Observational Techniques: anecdotal and critical incident records, check lists and rating scales in the clinical area, individual and group presentations period and projects quizzes and tests.

Summative evaluation: Final examination in all courses, practical examination in the clinical areas, final qualifying examination and defence of project. Continuous assessment will form 30% of the overall final grade.

Course Evaluation: Students are given evaluation form to assess the content and methods of implementation of the course, the relevance of content and assignments, the level of presentation and the performance of the lectures. Programme evaluation: at the end of each year, the student is given a questionnaire to evaluate the whole programme. Every five years; graduates performance will be evaluated to ascertain the relevance of their educational preparation to the needs of society. Review or revision of the curriculum is based on the compilation and interpretation of data from the various evaluation methods.

LIST OF EXISTING ACADEMIC STAFF FOR THE PROGRAMME

NAME OF ACADEMIC STAFF	AREA OF SPECIALIZATION	QUALIFICATION	RANK
Prof. Kolawole Ayodele	Nursing and Biochemistry	PhD	Professor
Prof. Okahai	Nursing	PhD	Professor
Dr. Oladimeji Olasunkanmi	Nursing	PhD	Senior Lecturer
Dr. Oladipo Martha	Nursing	PhD	Senior Lecturer
Dr. F.J. Bello	Medical lab Science	Ph. D Med. Lab Sci	Senior Lecturer
Dr. K. C. Komolafe	Molecular Biochemistry/ Biotechnology	Ph. D Biochemistry	Senior Lecturer
Dr. A.O. Agboola Alabi	Medical Biochemistry	Ph.D Medical Biochemistry	Lecturer I
Mr. O.T. Amoo	Microbial Physiology	M. Sc Microbiology	Lecturer I
Dr. A.O. Orekoya	Medicine and Surgery	MBBS	Lecturer II
Mrs. Olajumoke Oyebade	Nursing	M.Sc Nursing	Lecturer II
Mr. F. Olatujoye	Pharmaceutical Microbiology	M. Sc Microbiology	Assistant Lecturer

LIST OF EXISTING NON ACADEMIC STAFF FOR THE PROGRAMME

NAME OF ACADEMIC STAFF	AREA OF SPECIALIZATION	QUALIFICATION	RANK
Mrs. Adisa Adebukola Ekoh Jolly	Medical lab Science	HND, B.MLS, M.Sc	Chief Technologist
Mr. I.A. Adelakun	Science Lab. Tech.	HND SLT (Biology/Microbiology)	Senior Technologist
Akingbade T.O.	Nursing	B.Sc	Nursing officer
Lawal Ramota	Nursing	Diploma	Technologist II
Ashaolu Sherif	Nursing	Diploma	Technologist II
Mr. Toba Oke	Admin Officer	B.Sc	Senior Admin Officer
Mrs. Funbi Richards	Secretariat Studies	HND	Confidential Secretary