

## **1.0 INTRODUCTION**

### **1.1 Historical Background**

Makudi College of Health and Medical Laboratory Science (RC 1352857) was formed in August 2016. The College is a product of a consortium of BWAMEDIX and Worldwide Laboratory Improvement (USA) inc. The College is co – promoted by The Catholic Men’s Organization, and Friends of Makurdi College of Health and Medical Laboratory Science.

### **1.2 Profile**

It has a Director who is also the Provost and Four (4) others Directors as Principal Officers of the College. Other Principal Officers includes;

COMPANY SECRETARY

DEPUTY PROVOST

REGISTRAR AND SECRETARY TO THE GOVERNING BOARD

COURSE COORDINATORS

BURSAR

### **1.3 VISION STATEMENT**

To become the leading and model health science college where a diversity of students, scientists and professionals combine learning, discovery and technology to improve the health and well-being of communities

### **1.4 MISSION STATEMENT**

The mission of the College of Health Sciences is to prepare graduates in an inter-professional, Christ-centered learning community to promote and improve the health and well-being of

individuals and communities. This will be achieved through innovative research, outstanding education and exceptional service, and to inspire others to carry out this work.

### **1.5 VALUES**

The Mission and Vision of the College of Health Sciences, Makurdi are guided by a commitment to the following values:

- Christian Ethos
- Inter-professional Collaboration
- Innovation
- Excellence
- Lifelong Learning
- Servant Leadership
- Diversity
- Advocacy

### **COLLEGE MANAGEMENT COMMITTEE**

The College management committee is set up by the proprietors to run all aspects of administration of the College. It is composed as the Provost, Registrar, Course Coordinator and all the HODs as members.

### **ACADEMIC STAFF**

The academic staff is made up of full and part time employed lectures. The academic staffs are the professionally skilled trained qualified and licensed individuals the in various health and allied professions.

### **ACADEMIC BOARD**

This composed of all the full time employed lecturers, librarian and a member of the board of directors, Provost and any other co-opted member.

### **NON-ACADEMIC DEPARTMENT**

The non-academic staff is made up of all the non-teaching staff of the school.

## **STUDENTS REGISTRATION**

### Registration Requirements

- a. Students shall only be registered as students of the College on the payment of registration fee, production of admission documents duly signed with a sealed stamp by the appropriate authority and having satisfied the authority of correctness of the information submitted at the time of application for admission.
- b. All returning and fresh students must register at the beginning of every semester. Students are expected to collect Registration form from the school Registrar and fill. Newly admitted students can be issued with these forms on submission of their letters of admission while returning students must produce their identity cards for the purpose of identification.
- c. Any student who fails to register within the period specified by the school authority shall be deemed to have withdrawn voluntarily from the school.

## **ORIENTATION**

An orientation course is usually organized for students at every session. This programme is intended to enable new students settle down and adjust to school life. The students are introduced to the functions of various departments of the school.

## **CHANNELS OF COMMUNICATION**

### Communication within the Institution

- a. Individual students or student's association who wish to have access to the Provost should do so through their heads of Department or the Students Affairs Officer. This system quickens rather than delays actions.
- b. On purely academic matters, the steps should be through their Heads of Department through the Course Coordinator.
- c. All non-academic matters should pass through the students Affairs Officer. Nothing however, prevents the students from reporting special cases directly to the appropriate quarters such as, to the Librarian, or the Head of the Security Unit.

## **GENERAL RULES AND REGULATIONS**

i. When a student accepts admission into the school, it is assumed that he/she has serious purpose and sincere interest in his/her own intellectual and social development. For this reason, the College assumes that the student has agreed to obey set standard rules and other conditions established by the legally constituted Authority of the school. The school regards as serious offence all acts of unethical, immoral, dishonesty or destructive behavior's as well as violation of institutional Regulations.

ii. All members of the institution are to obey the laws of the Federal Republic of Nigeria and have reasonable consideration for the right of others. The College authority reserves the right upon evidence against a student to discipline or to insist that he/she goes through the established disciplinary processes.

iii. Notice Board

The school authority uses the notice board to communicate vital information to students. The notice board must be respected by all the students. Offensive articles on the notice board should be avoided. Any student who alters tears up or removes a notice has committed a serious offence. A student who wants to put a notice on the board must get permission from the student's affairs officer.

iv. Wastefulness /Prudence

It is very important that the students practice economy since the facilities provided are not limited and utilize such provision as water, electricity, cleaning materials economically as these are expensive.

v. Caution

Any student or group of students, who damage school property, shall be surcharged.

## **HOSTELS**

i. The school accommodates limited male and female students.

- ii. Hostel accommodation is optional for all students, and is limited to the availability of spaces or otherwise stated by the school authority.
- iii. Accommodation facilities are limited and priority is given to new in-take and final year students.
- iv. Students are responsible for cleanliness. The method they may employ to do this will be coordinated by the Hostel Matrons. There is hostel inspection every Saturday or as organized by the School Authority.
- v. It is illegal to cook inside the rooms. Any evidence on account of this will lead to seizure of cooking items, utensils and instant dismissal of the culprit(s) from the hostel.
- vi. No male student/visitors are allowed into the female and vice-versa.
- vii. Any deviation from the above tenets would earn the student(s) ejection, suspension, dismissal or otherwise applicable.
- viii. Visitors are allowed in school premises only between 4pm and 6:00pm on week days and between 12:00 noon and 6:00pm a weekends and public holidays.
- ix. It is an offence punishable by expulsion from the hostel for any student to sublet accommodation or keep any visitor overnight or permit a “squatter” in his/her/their room without the knowledge of the S.A.O (Student Affairs Officer).
- x. If an already ejected “Landlord” or “Squatter” with another student in a hostel, the second offender shall be suspended from the school for up academic year. While the first offender the new landlord forfeits his/her room allocation without any regard to earlier approval.

### **CLASS ATTENDANCE**

- a. All students are expected in their respective classes at the appointed time 7:50am to 4:00pm each day from Monday to Thursday and 7:50am to 12:00 noon Friday in their correct uniform with appropriate cover shoes or sandals, as directed by the department.
- b. No student is to be found roaming about or recreating or reading in the library during the lectures.
- c. Students are to very consistent with their school work.

- d. Any student whose records is less than 90% attendance will repeat the session irrespective of the reason for his/her being absent from the school.
- e. Student who falls sick during his/her course period must present to the school authority an evidence of medical treatment from the Government institution for protracted or persistent illness take care or note number (d) above.
- f. A student who absent him/herself from school for (30) days consecutively shall be instantly dismissed from the school.

**EXAMINATION**

General: *All School Examination shall be grade thus:*

- a. Written Exams - 100% maximum
- b. Practical Exams - 100% maximum
- c. Oral Exam - 10% maximum
- d. Continuous Assessment - 20% maximum
- e. Attendance - 90% maximum
- f. Any student with outstanding fee WILL NOT BE ALLOWED to write/take any semester examination(s) or benefits from practical postings.
- g. Proper official request for remarking of examination scripts shall attract a non refundable fee of five thousand naira (N5000) only per paper.
- h. Examination malpractice detected shall attract instant dismissal from the school.
- i. No student will be allowed to write any semester examination if they have any outstanding fees.  
Continuous Assessment less than 10% or absence in it disqualified for examination concerned.

**1<sup>ST</sup> SEMESTER EXAMINATION**

- a. The minimum pass mark for the examination is 40% for others while 50% for Community Health department for each written papers and other parts of the examination.

## **2<sup>ND</sup> SEMESTER EXAMINATION**

- a. This is aimed at promoting all successful students to the next class levels of their course programme. For a student to be qualified to sit for the examination he/she should be able to make ninety percentage (90%) minimum attendance. First year repeat students must pass their carry over examination before days are allowed to write their promotion and semester examination with others.
- b. Students who fail half (1/2) of their total courses are to repeat the class
- c. Fail practical repeat the class
- d. Pass more than half (1/2) carry over the fail papers
- e. Fail continuous assessment only – pass with warning
- f. A student is allowed to repeat a class only one and at the students expenses where applicable.

N.B The minimum pass mark is 40%/50% for each written paper and other parts of the Examination.

## **PRE-NATIONAL EXAMINATION**

The pre-national examination shall take the formal of the National Examination of the various courses (i.e the Respective Examination Board). Hence there is no carry over except with the next set as in the National Examination. However, the continuous assessment and attendance grading shall apply. Successful candidates at the Pre-National Examination only shall be entitled to sit the National examination. Details as applicable in each course are as follows:

## **CONTINUOUS ASSESSMENT**

Continuous assessment which carries 20% of all the school examinations consists of test and assignment by individual lecturers.

## **GRADING SYSTEM AND COMPUTATION OF CGPA**

All schools in the college adopt a five point grading system for certificate, diploma and their various higher diploma programmes.

The illustration of the grades in respect to their range and weight are given below;

Table 1.0: showing the range of score against their grades, weighting points for one credit course and remarks.

Range of Scores	Grades	Weighting	Point Remark
70 – 100	A	5	Excellent
60 – 69	B	4	Very Good
50 – 59	C	3	Good
45 – 49	D	2	Pass
40 – 44	E	1	Fail
0 – 39	F	0	Fail

Note: Grade F is considered as carryover. Classification of Certificate, Diploma and Higher Diploma based on CGPA is given below in Table 2.0.

Table 2.0: Showing the range of CGPA and their respective class of Diploma

CGPA	CLASSIFICATION
4.5-5.0	Distinction
3.5-4.4	Upper Credit
2.5-3.4	Lower Credit
1.5-2.4	Pass
0.1-1.4	Fail

## INFORMATION FOR GRADUATING STUDENTS

Project

All students of the college who finished their course work successfully are meant to write a project in partial fulfillment of the award of a Diploma or Higher Diploma. They will all be attached to different lecturers who will guide them through their research work. All project researches must be completed before final graduation.

## **FEES AND OTHER CHARGES**

It is always advised that all students pay and obtain their evidence of payment from their first session to the last session in the college for reference purposes. If any student fails to produce a teller for a particular session, the implication is that he/she has not paid for that session. Other charges in the college must not be handled with laxity because everything will count before a student could graduate from the college.

## **OTHER GRADUATING CONDITIONS**

For a student to be awarded certificate in the college, he/she must fulfill the following conditions;

1. A student must attain a minimum of 75% attendance in every course he/she registered for.
2. Participate fully in course work/assignment which constitutes 30% of the total examination marks for each subject and course work shall be of test, assignment, project where applicable.
3. Graduating students should ensure that they do not miss any end of semester examination. Examination scores are always computed on course work to give a total of 100% score marks.
4. All courses specified in the approved syllabus must have been taken and passed with sum total of cumulative Grading Point Average of 1.5 and above before any student could be awarded any certificate of the college.

## **LIBRARY**

College library is opened between 8:00am to 6:00pm or evening session is from 7:00pm as may be conducive to the school from Monday to Fridays and any other day that might be necessary. The library is manned by the College Librarian(s). The use of library is strictly under the stipulated library rules and regulations. Library registration fee shall be determined by the College Authority.

### **STUDENTS MOVEMENT**

Students who intend to travel home or elsewhere must apply for permission from the principal through the various heads of Department. The reason for the journey and the required must be stated and recorded in his personal file.

A letter of application must be tendered at least three days before the journey, except on emergency cases. Approval must be given before proceeding on the journey.

### **DISCIPLINE**

- a. The College does not admit pregnant women
- b. No female student is expected to be pregnant during the course period
- c. Any student who become pregnant during the training will be automatically repeat the session
- d. Examination rules applicable to all students
- e. Any students who commit the following offence are punishable by warning, suspension order and expulsion. Noise making unlawful assembly quarreling in the class misconduct, lateness to class, absenteeism, untidiness, disobedient, disrespect, to staff, alcoholism, cultism, drug abuse, smoking, traveling without permission and the likes.

### **NOTES:**

Students who commit any of the above will be referred to the College disciplinary committees for investigation and recommendations for appropriate action.

### **DISCIPLINARY PROCEDURE**

- a. Internal Disciplinary Committee: This committee includes discipline into the students by making sure that all rules and regulations of the College are complied with by the students. Also minor offences are considered, deliberated on, with recommendation forwarded to the Provost for necessary action. This committee also checks unruly behavior of the students within and outside College premises. Recommendations of other sub-committee in the College that concern discipline are considered by this committee.
- b. Membership of internal disciplinary committee:
  - No student is allowed in the Administrative offices, unless with good reason.
  - Any student who has a problem should table it before the class supervisor who will refer to Students Affairs Officer.
  - No student is permitted to handle his/her personal file.
  - All correspondence including application letters to the Provost should be handed over to the clerical staff.
  - All official correspondence outside the College must pass through the Provost.

## **EXAMINATION COMMITTEE**

This committee composed of the following members;

1. Provost - Chairman
2. HODs - Members
3. Secretary - One of the HODs
4. Any co-opted member

GENUINE COMPLAINT: (Correspondences are only received from the students during break time).

- All genuine complaints must be addressed to the Provost through the Students Affairs Officer.
- The College authority does not entertain anonymous letters and letter written under fictions names.

- Any student who has not completed the payment of school fees cannot write/take semester examination.

### **STUDENTS WELFARE/UNIONISM**

The school authority takes keen interest in student health fitness and welfare. It encourages all students and staff to take part in recreational activities and participate in well-known games and athletic. Programmes of sport activities are organized through the school sports master.

Issues pertaining to the student's social contentment in the area of feeding, accommodation, health, sports, guidance and counseling, clubs/society are closely monitored by the College authority.

## SECTION ONE

### MEDICAL LABORATORY SCIENCE

#### 2.1 PHILOSOPHY AND OBJECTIVES OF THE PROGRAMME

Medical Laboratory Technicians Professional Diploma Curriculum Harmonization

#### 2.2. AIM OF THE PROGRAMME

The aim of this curriculum harmonization is to train competent clinical laboratory service personnel to meet present and projected service needs in primary and secondary health care services in ECOWAS member states

This is a three (3) year semester based program with a strong practical medical laboratory exposure component. At the end of the training programme, the medical laboratory diploma holder should have the basic competences in the following areas;

- (i) Knowledge: At the end of each course, the graduand should have acquired basic knowledge that will enable them to work under the supervision of qualified Medical Laboratory Scientists
- (ii) Skills: The graduands should be able to handle , process and perform simple but systematic analysis of routine specimens he/she receives.
- (iii) Attitude: The graduands should appreciate the importance of his/her role in the chain of activities within the diagnostic laboratory. He/She should know the proper reporting procedure and action for any sample received in a professional

manner that ensures the spirit of teamwork and skillful communication with his/her peers and supervisory laboratory personnel.

- (iv) Competence and Professionalism: The graduands should be fully competent in planning and managing workload. This comprises organizing the work flow and proper utilization of space, instrumentation and resources in ensuring the production of accurate and reliable results for effective diagnosis

**2.3 OBJECTIVES:** Students who successfully complete this programme should be able to:

- i. Seek employment in a clinical laboratory setting with the ability to perform routine laboratory procedures in each department with accuracy and precision.
- ii. Recognize normal and abnormal test results and take necessary action with critical values.
- iii. Perform and interpret basic quality control procedures.
- iv. Operate and perform basic maintenance and troubleshooting of laboratory equipment.
- v. Recognize and adhere to safety policies and practices.
- vi. Demonstrate sound work ethics in interactions with patients, co-workers and other personnel.

## **2.4 ADMISSION REQUIREMENTS**

This programme is to train competent medical laboratory personnel at the middle manpower level. It entails exposing the students to basic knowledge and the practices of medical laboratory science.

This is a three (3) years intensive semester based programme with a strong medical laboratory exposure component.

- a) Prospective students for this programme must possess a minimum of four (4) credits passes at Senior Secondary School Certificate Level/GCE /NABTEB O-Levels in the following subjects: English, Mathematics, Chemistry, Biology and at least a pass in Physics at not more than two sittings.
- b) Prospective students will be selected through a competitive entrance examination, where applicable.

## **2.5 QUALIFICATION OF TRAINERS**

The minimum qualification of the trainers must be a university degree in MLS (BSc, BMLS)/AMLSCN in a relevant discipline.

## **2.6 TEACHING AND LEARNING METHODS**

Teaching students the material of each course should be according to the best known educational techniques. Examples of teaching techniques should include but not limited to the following:

- i. Classroom lectures
- ii. Demonstration using models and phantoms
- iii. Tutorials
- iv. Reports, logbooks and presentations
- v. Computers and Audio Visual instruments
- vi. Health facility visits/placements

All 3-credit hour courses comprise 2 hours of lecture and 3 hours of practical or 1 hour of tutorial per week of the semester.

## 2.7 EXAMINATIONS AND ASSESSMENT

The methods of student's evaluation during their study will be according to the rules and regulations set out by the domicile training institutions. This should include quizzes, mid semester examinations, practical examinations and reports in addition to the final written examination. Assessment of student's performance in each course will be done through a combination of continuous assessment and end of semester examination. The final examination mark must carry the total marks for both the theoretical and practical components.

The Weighting will be as follows:

- ✓ Continuous Assessment = 30%
- ✓ End of Semester Examination = 70%

A letter grade and numerical points shall be awarded to each student based on his/her total scores on all the evaluation criteria.

Marks (%)	Letter Grade	Class of Pass
75-100	A	Distinction
60-74	B	Upper Credit
50-59	C	Lower Credit
40-49	D	Pass
0-39	F	Fail

NB.

- a) In order for a student to be considered to have passed a course, the student should score at least 40% for the theory and 50% for the practical examinations.*

- b) The pass mark for the final regulatory council examination is 50%.*
- c) Graduation Requirements: Graduating students must have passed the required registered units for the program.*

## **OBJECTIVES AND ADMINISTRATION**

### **2.8 PHILOSOPHY AND OBJECTIVES OF THE SCHOOL**

The main aims and objectives of the school are to;

- (a) Produce middle level manpower in the health sector of the Nigerian Economy
- (b) To equip graduates with adequate knowledge of Health and Health related issues
- (c) To promote through training, research and other means, the advancement of knowledge and the development of requisite skills and its practical applications to solve the health needs of target communities.
- (d) To offer course in Diploma Medical Laboratory Science to cater for health needs at primary, secondary and tertiary level of health care delivery.
- (e) Undertaking any other activity appropriate for health training institution of this nature

In pursuance of these noble objectives, the following, among others are here assigned by law to the school:

- (i) Provision of rules and conditions for admission to individual's course of study.
- (ii) Provision of research for dissemination
- (iii) Establishments of Departments/Schools, units of learning and research

- (iv) Creation of Offices, hiring of staff and firing same based on prescribed conditions of services.
- (v) Provision of study facilities such as the library, laboratories, auditorium, lecture halls, sports complex etc
- (vi) Receipt of tuition fees boarding fees as prescribed from time to time
- (vii) Conduct examinations to persons who have pursued a course of study and have satisfied such other requirements as may be laid down.
- (viii) Provision of a conducive atmosphere of learning and acquisition of practical skills for the award of prizes for the advancement of knowledge, discipline, God fearing and service to the community

## **2.9 ACADEMIC BOARD**

The Academic board comprises the followings:

- |        |                             |           |
|--------|-----------------------------|-----------|
| (i)    | The Provost                 | Chairman  |
| (ii)   | Heads of Department         | Member    |
| (iii)  | Course Coordinator          | Member    |
| (iv)   | The Registrar               | Member    |
| (v)    | Dean of Academics           | Secretary |
| (vi)   | Practice Area Supervisor    | Member    |
| (vii)  | Examination Officer         | Member    |
| (viii) | Any other co – opted member |           |

### **2.9.0 ADMISSION REQUIREMENT AND REGISTRATION PROCEDURES**

#### **2.9.1 ADMISSION REQUIREMENT BY THE DEPARTMENT**

Medical Laboratory Department (Diploma)

Course Duration: 3 years

Entry Requirement

Five (5) credits in WASC/GCE or NECO which must include: Biology, Chemistry, English Language, Physics and Mathematics at not more than two sittings and must be obtained within a space of 10 years prior to enrollment.

### **2.9.2 ADMISSION POLICY**

Admission is open to all qualified candidates irrespective of tribe, religion or Nationality. Consistent with this policy the College admits qualified applicants from all states of the Federation including Nationals from other countries. Students are expected to be of high moral and academic standards as long as they remain students of the College.

### **2.9.3 ADMISSION PROCEDURE**

Candidates seeking admission must satisfy the minimum entry requirements of the college and must also satisfy where applicable the chosen course requirement into which entry is being sought. The following satisfy the minimum entry requirement; a minimum of four (4) credit passes in SSCE, GCE, NECO, WAEC, and NABTEB or their equivalent as the Academic Board shall deem fit.

### **2.9.4 ADMISSION PROCESS**

This is by purchasing and completing an application form and success at an interview or an entrance examination as the academic committee deems fit.

### **2.9.5 ACCEPTANCE OF OFFER OF ADMISSION**

Once the admission list is published, the candidate will report to the Registrar's Office to commence registration process immediately on payment of acceptance fee which is part of non-refundable deposit.

### **2.9.6 REGISTRATION (NEW STUDENTS)**

Newly admitted students/candidates should follow the under listed steps/procedure before they become bona fide students of the College.

- (a) Each student will be expected to obtain an admission / acceptance letter
- (b) Proceed to the Bank and pay the prescribed fees
- (c) Proceed to the Bursary Department and obtain clearance form (receipt) from the cashier
- (d) Present the receipt from the Bursary to the ICT unit for online completion of student e-bio data form and online payment of fees.
- (e) Proceed to the Academic Office /Course Coordinator/ HOD along with the following;
  - (i) Students e - bio data form
  - (ii) Copy of Admission Letter
  - (iii) All payment receipts
- (f) Proceed to the Student Affairs Division for registration, confirmation of availability of accommodation and issuance of ID Cards

### **2.9.7 RETURNING STUDENTS**

Each returning student is expected to go through the under listed procedure before he/she is regarded as a bona fide student of the College.

- (a) Proceed to the Bank for payment of school fees
- (b) Proceed to Bursary Department and obtain receipt from the Cashier
- (c) Proceed to ICT unit and present the receipt for;
  - (i) Further registration
- (d) Proceed to the Academic Office /Course Coordinator /HOD along with the copy of printed pin for further registration

NOTE: Carry over students MUST register along with other students

### 2.9.8 LATE REGISTRATION

In case of late registration, the affected student will be expected to;

- I. Get clearance from the course coordinator
- II. Pay the relevant / prescribed registration fees
- III. Pay the prescribed school fees / late registration fees
- IV. Follow all other procedures specified above

### 2.9.9 STRUCTURE FOR THE MEDICAL LABORATORY DIPLOMA PROGRAMME

#### 1. STRUCTURE FOR THE DIPLOMA PROGRAMME

##### YEAR 1

COURSE CODE	COURSE TITLE	Credit	T	P	L
<b>FIRST SEMESTER</b>					
ELS 101	Communication Skills I	<b>2</b>			

CSC 101	Introduction to IT I	2			
CHM 101	General Chemistry	3			
BIO 101	General Biology I	3			
PHY 101	General Physics I	3			
MTH 101	General Mathematics I	2			
GST 101	Citizenship Education*	0			
GST 103	History and Philosophy of Science	2			
EHT 101	Introduction to Environmental Health	2			
FRN 101	Functional French I	2			
<b>TOTAL</b>		<b>21</b>			
<b>SECOND SEMESTER</b>					
ELS102	Communication Skills II	2			
CSC 102	Introduction to IT II	2			
PHY 102	General Physics II	3			
CHM 102	Organic Chemistry	3			
BIO 102	General Biology II	3			
MTH 102	General Mathematics II	2			
FAP 102	First Aid and Primary Healthcare	2			
GST 102	Philosophy & Logic/ Critical Reasoning	2			
FRN 102	Functional French II	2			

<b>TOTAL</b>	<b>21</b>			
--------------	-----------	--	--	--

**YEAR 2**

<b>COURSE CODE</b>	<b>COURSE TITLE</b>	<b>Credit</b>	<b>T</b>	<b>P</b>	<b>L</b>
<b>FIRST SEMESTER</b>					
ANA 201	Basic Anatomy	<b>3</b>			
PHS 201	Basic Physiology	<b>3</b>			
BCH 201	Basic Biochemistry	<b>3</b>			
MLT 201	Introduction to MLS	<b>3</b>			
MLT 203	Introduction to Immunology	<b>2</b>			
MLT 205*	Clinical Laboratory Posting I	<b>3</b>			
MLT 207	Basic Laboratory Techniques I	<b>2</b>			
BIO 201	Basic Cytology and Genetics	<b>2</b>			

<b>TOTAL</b>		<b>21</b>			
<b>SECOND SEMESTER</b>					
MLT 202	Medical Microbiology I	<b>3</b>			
MLT 204	Haematology I	<b>3</b>			
MLT 206	Clinical Chemistry I	<b>3</b>			
MLT 208	Histopathology I	<b>3</b>			
MLT 210	Research Methodology	<b>2</b>			
MLT 212	Introduction to Management, Lab Organization & Ethics	<b>2</b>			
MLT 214*	Clinical Laboratory Posting II	<b>3</b>			
MLT 216	Basic Laboratory Techniques II	<b>2</b>			
<b>TOTAL</b>		<b>21</b>			

*\*This is an intra/inter-semester and long vacation laboratory posting.*

**YEAR 3**

<b>COURSE CODE</b>	<b>COURSE TITLE</b>	<b>Credit</b>	<b>T</b>	<b>P</b>	<b>L</b>
<b>FIRST SEMESTER</b>					
MLT 301	Medical Parasitology	3			
MLT 303	Blood Transfusion Science	3			
MLT 305	Clinical Chemistry II	3			
MLT 307	Histopathology II	3			
MLT 311	Clinical Laboratory Posting III	3			
MLT 309	Seminar in Laboratory Science	3			
<b>TOTAL</b>		<b>18</b>			
<b>SECOND SEMESTER</b>					
MLT 302	Medical Microbiology II	3			
MLT 304	Haematology II	3			
MLT 306	Clinical Chemistry III	2			
MLT 308	Histopathology III	2			
MLT 312	Research Project	6			
MLT 310	Good Laboratory Practice	2			
<b>TOTAL</b>		<b>18</b>			

**NB**

A semester is 15 weeks whereby one week is for registration, 12 weeks for Lectures and 2 weeks for Examinations.

Students work 8 hours a day for five days a week giving a total of 40 hours a week.

CV = Total credit value = 120

## **COURSE DESCRIPTIONS FOR THE DIPLOMA PROGRAMME**

### **ELS 101 COMMUNICATION SKILLS I**

**(2 Credits)**

The proper use of grammar, acquire writing skills, correspondence with others and enhanced skills in spoken English. Grammar and its usage, media and modes of communication, channels of communication, barriers to communication, listening skills, body language, humour in communication, and the use of punctuations effectively will also be taught,

### **ELS 102 COMMUNICATION SKILLS – II**

**(2 Credits)**

Introduction to scientific writing, report writing and making scientific presentations. It will emphasize on writing skills, paragraph and essays. Students shall also study the preparation of technical documents such as memos, reports, letters and proposals.

### **CHM 101 GENERAL CHEMISTRY**

**(3 Credits)**

Basic idea of the atomic theory, electronic configuration, radioactivity chemical laws, SI Units, periodic classification of elements and chemical bonds. This will also cover the preparation of solutions, and factors affecting solubility. Acids, Bases and Salts: their definitions and properties, Hydrogen ion concentration (pH), measurement of pH and its importance, pH meter indicators and buffer solutions, introduction and properties of electrolytes and theory of ionization will be emphasized. Oxidation and reduction definitions, reactions and uses of oxidizing and reducing agents, Kinetic theory and chemical equilibrium will also be taught.

### **Practical**

This will entail the use of analytical balance, preparation of standard solutions of acids and bases. Titrations between acids and bases using standard indicators and also iodometric and redox titrations. Measurement of pH using pH indicators and pH meter will be dealt with.

## **CHM 102 ORGANIC CHEMISTRY**

**(3 Credits)**

Introduction to Organic Chemistry, properties of carbon, hybridization, methods of purification, qualitative and quantitative analyses. Empirical molecular formula and structural formula should be determined. The procedure for using the IUPAC nomenclature of organic compounds should be taught. The sources, preparation, properties and uses of the following organic compounds: Hydrocarbons (Alkanes, Alkenes, Alkynes), Alcohols, Aldehydes and Ketones, Organic Acids and their derivatives. Distinction between Alcohols and Phenols should be mentioned.

### **Practicals**

Paper chromatography, preparation of aspirin, recrystallization and analysis of tea will be covered.

**BIO 101 GENERAL BIOLOGY I****(3 Credits)**

Types, structures and the organisation of plant and animal cells. Fundamental principles of classification of plants and animals, diversity of plants and animals should be taught. Functions of the cell organelles, cell division, life biochemical processes, metabolism, photosynthesis, chemosynthesis, respiration, excretion, regulation of body fluid and electrolytes will be covered.

**Practicals**

Demonstration of plant and animal cells. Draw and label the internal organs as seen in a dissected small mammal. Demonstration of photosynthesis and chemosynthesis. Draw and label internal structure of root and stem in a flowering plant. Draw and label amoeba. Identify and classify some examples of animals.

**BIO 102 GENERAL BIOLOGY II****(3 Credits)**

Hormonal and nervous control, structure and functions of tissues, organs and systems..\_Nutrition: classes of food, metabolism of carbohydrate, protein, lipid, minerals and vitamins. Enzymes will be taught. The structure of DNA and RNA, genetics, heredity and variation will be emphasized.

**Practicals**

Dissection of animals (rabbit, mouse), identification of tissues; Identify food substances present in specimens by elementary biochemical tests.

**PHY 101 GENERAL PHYSICS I****(3 Credits)**

Dimensional analysis. Elements of statics. Vector algebra. Kinematics and dynamics of a mass point, laws of mechanics and gravitation, Kepler's laws. Motions of rigid bodies; moment of inertia, angular momentum. Conservation laws. Simple harmonic motion. Elastic properties of solids, module of elasticity. Fluid mechanics and hydrodynamics.

### **Practical**

Perform experiments to illustrate circular motion and rotational motion. Perform experiments in the measurement of mass using beam balances, measure lengths using vernier calipers and metre rule, time, using stop watch, simple pendulum. Perform simple experiments to illustrate the principles of operation of levers, inclined plain pulleys etc. Perform experiment to illustrate conduction, convection, and radiation. Perform simple experiments on reflection and refraction.

## **PHY 102 GENERAL PHYSICS II**

**(3 Credits)**

Electrostatics; Coulomb's law, Gauss' law, simple applications, electric field, electrostatic potential, Energy in electric field, Capacitance, Insulators, Conductors, Dielectrics, Polarization. Thermoelectricity, magnetic effects of currents, Ampere's law application, Permanent magnetism, Earth's magnetic field, Faraday's law of induction, Alternating Current (AC) circuits, Direct Current (DC), Measuring devices, motion of charged particles in electric magnetic field, Hall's effect. Sedimentation techniques; Theory and forces involved. Types of sedimentation, Application of sedimentation. Electrophoresis - Theory and types of equipment used, Application of electrophoresis; Electrical phenomena and electrochemistry.

### **Practical**

Perform simple experiment to illustrate conversion of energy from one form to another eg solar to electrical, chemical to electrical, electrical to heat, electrical to light, nuclear to electrical, and mechanical to heat. Solve simple practical problems involving work and energy. Illustrate experimentally the concept of waves using examples such as ripples on water, waves on strings and helical strings. Perform experiment to illustrate dispersion of white light by prism and relate it to the formation of rainbow. Demonstrate experimentally magnetic field and gravitational field. Perform simple experiment to illustrate various effects of electric current namely, heating effects as in heating coil, electric bulbs, chemical effects as in car batteries, magnetic effect as in electric bell, loud speaker and microphone.

## **MTH 101 GENERAL MATHEMATICS I**

**(2 Credits)**

Formulae for sum, product and quotient, the chain rule, differentiation of definite and indefinite algebraic, trigonometric, exponential and logarithmic functions, maxima and minima, tangents and normals, Fundamental theory of integral calculus, simple applications to areas and volumes, methods of integration. Set theory, set union, and intersection subset, finite sets, universal, complement of a set, empty sets and Venn-diagrams. Remainder theorem, inequalities; partial fractions, surds, indices and logarithm.

**MTH 102 GENERAL MATHEMATICS II****(2 Credits)**

Functions and relationship between the roots of a quadratic equation and the coefficients, binomial - theorem, induction, permutation and combination. Expression, matrices. Sine, cosine, tangent, circular measurement and small angles. Differentiation and integration. Equation of linear circles, ellipse, mean, mode, median, probabilities, variables, correlation, scatter diagram, test of significance and data presentation.

**GST 101 CITIZENSHIP EDUCATION****(3 Credits)**

History, values, norms and cultural characterization of African countries, Role of culture in the behaviour of people, ethics and discipline in National life; rights and obligations; arm of government, citizenship; federalism and revenue allocation etc. African society - development, migration, large and small rural movements and its effect on man and disease, changing pattern of diseases in rural and urban societies, changing moral values. Cultural nationalism and political evolution of African states, concept of religion in humanistic perspectives, traditional education and its humanistic functions, role and concept of functional education in National development.

**GST 103 HISTORY AND PHILOSOPHY OF SCIENCE****(2 Credits)**

History of science, Philosophy of science – positivism, rationalism, Anarchic philosophy etc. and their relationship with science, mathematics, medicine, politics, technology etc. Relevance to Nigeria; Environment – sustainability and renewability, pollution, energy; Health, Nutrition and Diseases – awareness, preventive health practices, newer and common diseases etc.

**EHT 101 INTRODUCTION TO ENVIRONMENTAL HEALTH****(2 Credits)**

Definition, history and components of environmental health. Effects of environmental factors such as water, air, noise biological, socio-cultural and socio-economic, on the health of the community, method of assessing these factors and steps taken to improve on the quality of the

environment. Concepts of occupational health and safety. Principles and components of occupational health, various hazards in the occupational environment. Common occupational diseases and their prevention, appropriate hazard control measures in the work environment. Carrying out a walk through inspection of an industry. Management of clinic or hospital environment.

### **FRN 101 & 102 FUNCTIONAL FRENCH I & II**

**(2 Credits each)**

The students from English speaking countries must be taught basic functional French that would enable them speak, read, write and interact with people across borders or with people from other language background. This will promote the spirit and fulfil the primary aim of harmonization and mobility of health professionals within the region.

**Content:** The content should be according to the approved content of relevant department of the domicile Institution

### **CSC 101 & 102 INTRODUCTION TO IT I & II**

**(2 Credits each)**

Concept and scope of Information Technology, Computers for information storage, information seeking, information processing and information transmission. Elements of computer system, computer hardware and software; numeric data, alpha numeric data; contents of a program and processing. Computer organization, block diagram of a computer, CPU, memory. Input devices; keyboard, mouse etc; output devices; VDU and Printer, Scanner and Plotter. Electrical requirements, inter-connections between units, connectors and cables.

Secondary storage; magnetic disks – tracks and sectors, optical disk (CD and DVD Memory), primary and secondary memory: RAM, ROM, PROM etc. Capacity; device controllers, serial port, parallel port, system bus. Exercises on file opening and closing; memory management; device management and input – output (I/O) management with respect of windows. Installation concept and precautions to be observed while installing the system and software. Introduction about Operating Systems such as MS-DOS and Windows. Special features, various commands of MS word and MS-Excel. About the internet – server types, connectivity (TCP/IP, shell); applications of internet like: e-mail and browsing. Various Browsers like WWW (World Wide Web); hyperlinks; HTTP (Hyper Text Transfer Protocol); FTP (File Transfer Protocol). Basics of Networking – LAN, WAN and Topologies.

**GST 102 PHILOSOPHY AND LOGIC/CRITICAL REASONING (2 Credits)**

Definition and history of Philosophy; Introduction to main branches of philosophy; Definition, history and development of Logic; arguments, fallacies, categorical propositions; symbolic logic; special symbols in symbolic logic; conjugation, Negation, Affirmation, Disjunction, Equivalence and conditional statements. Formal proof; Truth table; Laws of thought, methods of deduction using rules of inference and biconditional, Introduction to Qualification theory.

**MLT 310 GOOD LABORATORY PRACTICE (2 Credits)**

Definition, concepts, GLP and GCLP, SOP'S, concepts of bio-safety in the laboratory, International Standards Organization (ISO); particular requirements for quality and competence for clinical laboratories, QA, QC, documentation, storage, handling and disposal of biological wastes.

**FAP 102 FIRST AID AND PRIMARY HEALTHCARE (2 Credits)**

Basic concepts of first aid. Accidents and minor surgery care of emergency. Referrals, wound dressing, treatment of shock, causes and treatment of burns. Care of accidents in the laboratory. Basic concepts of primary health care. Components of public health. Structure of primary health care. Functions of primary healthcare. Immunization, health education, role of medical laboratory in primary healthcare. Related organisation and the functions. Infection and control. Preventive measures. Elements of primary health care, mental health, nutrition, environmental hygiene, common diseases, diagnosis and treatment.

**ANA 201 BASIC ANATOMY (3 Credits)**

General study of the upper limbs, thorax, abdomen and lower limbs. Skeletal Systems: The important bones and joints. Muscular Systems: some important muscles of the body.

### **Practical**

Demonstration of various bones and joints. Demonstration of structural differences between smooth and cardiac muscles.

### **BCH 201 BASIC BIOCHEMISTRY**

**(3 Credits)**

Chemistry, structure and properties of carbohydrates. Classification of carbohydrates. Digestion and TCA cycle; phosphogluconate pathways. Glycolytic pathway, Gluconeogenesis. General properties of proteins, classification of proteins and amino acids. Chemistry, properties, structure and classification of lipids.

### **Practical**

Demonstration of carbohydrates, proteins and lipids.

### **PHS 201 BASIC PHYSIOLOGY**

**(2 Credits)**

Introduction to human body and its physiology. Elementary tissues of body and their classification along with brief description of the following: Central Nervous system; Digestive system; Respiratory system. Reproductive System; Circulatory / Hormonal system; Excretory system. Blood and body fluids.

### **Practical**

Demonstration of various parts of body using models and charts.

**MLT 201: INTRODUCTION TO MLS****(3 Credits)**

Introduction to the various branches of medical laboratory science – Haematology, Blood Transfusion Science, Medical Microbiology, Parasitology, Immunology, Clinical Chemistry, Forensic Science, Histopathology, Histochemistry, Virology, Mycology, Exfoliative Cytology, Laboratory Management

**MLT 202 MEDICAL MICROBIOLOGY I****(3 Credits)**

Introduction to Microbiology. Definition, history, relationship of micro-organisms to man, and safety guideline in a microbiology laboratory. Morphology of bacteria. Diagram of a bacterial cell including spores, flagella and capsules. Bacterial growth curve and nutritional requirements. Classification of micro-organisms with special reference to bacteria:

Staining techniques. Methods of smear preparation, Gram stain, AFB stain,

Culture media: liquid and solid media, synthetic media, routine laboratory media (basal, enriched, selective, enrichment, differential, storage and transport media). Bacterial culture and culture techniques. Inoculations of culture media, aerobic, anaerobic culture and carboxyphilic, isolation of pure cultures and disposal of cultures.

**Practical**

Demonstration of safety rules (universal precautions) in a microbiology laboratory. Cleaning agents and techniques of cleaning of glass and plastic ware. Disposal of cultures. Preparation of material for sterilization in autoclave and hot air oven. Use of sterilization by autoclave and hot air oven. Preparation of culture media. Preparation of stains, staining reagents and composition. Gram stain & Ziehl-Neelsen.

**MLT 204 HAEMATOLOGY I****(3 Credits)**

Haemopoiesis. Erythropoiesis, leucopoiesis and thrombopoiesis. Definition, composition and functions of blood. Normal values and Anticoagulants. Definition and various types of

anticoagulants along with their mode of action, merits and demerits of each. Collection and preservation of blood, collection of blood; venous and capillary. Various equipment used for collection of blood samples. Safety measures at the time of sampling and collection. Preservation and disposal of processed blood samples. Romanowsky stains-Theory and preparation, choice of slide and spreader and preparation of blood film. Characteristics of good film preparation. Staining procedure and principles. Effects of pH on staining.

### **Practical**

Preparation of various anticoagulants. Collection of venous and capillary blood. Preparation of buffers. Preparation of the stains and other reagents. Preparation of peripheral blood film (PBF). To stain a peripheral blood Film by Leishman – stain. Haemoglobin estimation (oxy Hb and cyanmethaemoglobin method)

## **MLT 206 CLINICAL CHEMISTRY I**

**(3 Credits)**

Definition and Importance of Clinical Chemistry. SI Units and their use, volumetric apparatus and their calibration. Carbohydrates Sources, Definition, classification. Optical activity, composition. Lipids: Introduction, definition, classification, fatty acids, fats, triglycerides, phospholipids, sterol, ergosterol, cholesterol and reactions of fats; role of fats. Proteins: Introduction, definition, classification, composition, hydrolysis, molecular weight, amino acids and their structure, Colorimeter, Spectrophotometer, Flamephotometer and Glucometer. Blood chemistry, composition of blood and its functions. Use of various anticoagulants. Separation of serum and plasma. Different protein precipitation agents and preparation of protein free filtrate (PFF). Collection and preservation of biological specimens: Blood, Urine/other body fluids and Stool.

### **Practical**

Tests for identification of carbohydrates (Benedict's test, Molisch test). Tests for reducing sugars, osazone test, silver mirror and Seliwanoff's test. Tests for identification of proteins (Biuret, Sulphosalicylic acid test and heat test). Colour tests for proteins. Tests for identification of fat

(solubility). Tests for detection of aldehydes and ketones. Handling and maintenance of analytic instruments – centrifuge, flame photometer, analytical balance, colorimeter, spectrophotometer. Preparation of various anticoagulants and specimen collection containers. Collection of blood by various methods and use of vacutainers. Separation of serum and plasma. Preparation of different protein precipitating agents, PFF preparation.

## **MLT 208 HISTOPATHOLOGY I**

**(3 Credits)**

Basic Terminology. Structure of cell and its function. Definition of Histology. Definition of Histopathology. Definition of Biopsy. Definition of Autopsy. Definition of Autolysis. Definition of Putrefaction. Different Methods of Preparation of Tissues. Unfixed methods. Smears and crushed smears. Imprint methods. Teased preparation. Squashed preparation and Frozen section. Fixed Methods: Paraffin embedding, Introduction to celloidin embedding, Introduction to gelatin embedding, Reception, recording, labeling and preservation of histological specimen. Fixation, Various types of fixatives, classification, composition, advantages and disadvantages, Processing of histological Tissue for Paraffin Embedding, Dehydration, Clearing, Impregnation, Blocking, Automation: Histokinete (automatic tissue processor), embedding stations, their care and maintenance, Microtomy, Microtome, Various types of microtomes, Advantages and disadvantages, Working principle, care and maintenance, Microtome Knives-Sharpener/honing techniques'/polishing/stropping techniques, Section Cutting, Rough cutting and trimming, Fine cutting, Use of tissue floatation bath, Mounting the section to the slide after cutting, Cutting faults in sections and their remedies, Staining (Routine): Haematoxylin and Eosin, Principle of stain and their importance, Various steps of staining, Deparaffinization, Hydration, Staining, Differentiation, Blueing, Counterstaining, Dehydration, Creasing, Mounting. Mountants, Types (aqueous, resinous), Applications, Introduction of terms, Solvents, Mordants,

### **Practical**

Preparation of smears, imprints, teased and squashed preparation. Preparation of various types of fixatives. Preparation of block from selected tissue piece with special emphasis on orientation and labeling. Demonstration of preparation of microtome knife (including honing and stropping). Demonstration of Microtome parts, their function and maintenance. Demonstration of rough

cutting and trimming of paraffin blocks. Demonstration of staining apparatus. Demonstration of routine H and E staining.

### **MLT 203 INTRODUCTION TO IMMUNOLOGY**

**(2 Credits)**

Immunoglobulins – structure and function, general organization and assembly, classification. Antigen-antibody interactions. Phagocytic cells, chemo-taxis and effector function of macrophages and granulocytes. The complement system. Humoral immune response, cell-mediated immune response.

### **MLT 210 RESEARCH METHODOLOGY**

**(2 Credits)**

Basic concepts of research. Selecting a research topic or problem. Sampling and sampling techniques. Literature review, Definition of problem, research process, data collection and analysis. Design and use of questionnaire. Experimental design, writing research proposals. Writing research report. The role of research in National Development. Ethical issues in research.

### **MLT 207 & 216 BASIC LABORATORY TECHNIQUES I & II each)**

**(3 Credits**

#### **Equipment**

Principle, use and maintenance of balances (simple chemical), Still (metal, all glass), Centrifuges, Thermometer, Refrigerators and freezers, Oven, Autoclaves, Gas cylinders and valves. Use, care, cleaning and sterilization of glassware including test tubes, slides, petri dishes, pipettes and other graduated apparatus, syringes and other surgical instruments. Filters: paper, sintered glass, asbestos, membrane, Buchner funnel. Colorimeter; Microtome

#### **General**

Anticoagulants, collection and storage of specimens in the different laboratories. Reception and recording of specimens. Storage, handling and disposal of infected materials and dangerous

compounds. Safety measures taken in the various laboratories and emergency treatment for accidents. Production and storage of distilled and de-ionized water. Selecting and testing glassware and cotton wool. Storage of chemicals and reagents. Sterilization techniques – body fluids, blood, culture media. Disinfectants and Antiseptics. Preparation of stains, buffer solutions, reagents etc.

### **Animal**

Housing, feeding, cleaning and handling of normal and experimental rabbits, guinea pigs, rat and mice. Cage sterilization and disposal of infected excreta. Killing and preparation of animal for post - mortem examination.

### **Microscopy**

Elementary principles of microscopy. Manipulation and care of the microscope, determination of its magnifying power.

### **Sterilization**

Sterilization under steam, dry heat, red heat, boiling, filtration and chemical. Seitz glass filtration.

### **Volumetric and Dilution Methods**

Use of graduated and dropping pipettes. Preparation of percentage, normal and molar solution.

## **BIO 201 BASIC CYTOLOGY AND GENETICS**

**(3 Credits)**

Genetics and its scope, Mendelian laws of inheritance, physical and chemical basis of inheritance, man as an object of genetic expression, Modification of classical Mendelian ratios, Heredity and environment, Probability and the Chi-square test, Quantitative and multiple allelic inheritance,

sex developments, sex linkage and sex abnormalities in man. Mutations, Heredity, Eugenics and future of mankind. Historical introduction to Cytogenetics including classification of human chromosomes and methods of preparation, Cell division mitosis and meiosis.

### **MLT 301 PARASITOLOGY**

**(3 Credits)**

Introduction to medical parasitology. Classification of parasites of medical importance. General characteristics of protozoa and helminthes. Collection, transportation, processing and preservation of clinical samples for routine parasitological investigations. Principles and application of direct and concentration techniques of stool for demonstration of ova, cysts and parasites. Morphology, life cycle, route of transmission and laboratory diagnosis of Protozoa (Amoeba, Flagellates, Ciliates and Sporozoa). Morphology, life cycle, route of transmission and laboratory diagnosis of Helminths (Platyhelminths and Nematohelminths).

#### **Practical**

Collection and routine stool examination for detection of intestinal ova, cysts and parasites. Saline and iodine preparation. Concentration methods: Floatation method (saturated salt solution/zinc sulphate), Centrifugation method (formal - ether). Identification of following adult worms from preserved specimen/slides: protozoa and helminthes. Preparation and identification of blood parasite.:Preparation of stains (Leishman, Giemsa and Field stain), Preparation of thin and thick blood smears, Staining of smears by Leishman, Giemsa and Field stains.

### **MLT 206 CLINICAL CHEMISTRY I**

**(3 Credits)**

Blood Glucose estimation and Glucose Tolerance Test. Principle and methods of estimation. Reference values. True and apparent sugar. Precautionary measures. Metabolism of glucose, Renal threshold, Clinical importance of blood glucose and Glucose Tolerance Test, Serum Calcium, Principle and procedure of estimation, Reference values, Clinical importance, Plasma and Serum proteins, Definition and formation of plasma proteins, different methods of estimation

including principles and procedures, Reference values, Clinical importance, Serum cholesterol, Formation of cholesterol, Various methods of estimation including principles and procedures, Electrolytes and trace elements, Functions of electrolytes ( $\text{Na}^+$ ,  $\text{K}^+$ ,  $\text{Cl}^-$ ,  $\text{Ca}^{++}$ ,  $\text{PO}_4^{3-}$ , and metabolism of these ions, Principles and procedures of estimation, Reference values, clinical importance, Quality control in clinical biochemistry.

### **Practicals**

Estimation of blood glucose using O-toluidine method and enzyme method, Performance of GTT, Serum urea estimation of a clinical sample, Plasma and serum protein estimation of a clinical sample, Serum cholesterol estimation of a clinical sample, Estimation of electrolyte levels of  $\text{Na}^+$  and  $\text{K}^+$  by flame photometer, kit method and  $\text{Cl}^-$  estimation, Preparation of reagents (standard solutions and common laboratory reagents).

### **MLT 208 HISTOPATHOLOGY I**

**(3 Credits)**

Histochemical Stains, Introduction to histochemical and special stains and their uses. Different types of histochemical and special stains: PAS, Silver impregnation method for reticuline fibres, Ziehl Nelson for AFB (Mycobacterium laprae and tuberculosis), Masson's trichrome stain, Perl's reaction – iron, Oil red 'O' – fat, Von Gieson's – connective tissue, Gram's stain – gram negative and gram positive bacteria. Decalcification: Use of decalcification, various types of decalcifying fluid, their mechanism, advantage, disadvantage and applications. Assessment of decalcification, .Handling of fresh histological tissues (Frozen Section), Processing of frozen tissue, Cryostat/Freezing microtome, Advantage, disadvantage of cryostat/freezing microtome, Working, principle, care and preventive maintenance of microtomes, Section cutting, Staining (routine and special), mounting, Use and care of instruments, Collection of various types of samples and their preservation

### **Practical**

Demonstration of PAS stain, demonstration of Z-N stain for AFB, Demonstration of Masson's Trichrome stain, Demonstration of Perl's Reaction, Demonstration of Van Gieson's stain,

Demonstration of Gram's stain, Preparation of decalcifying fluids. Assessment of decalcification by mechanical, chemical and X-ray method. Demonstration of freezing microtome/cryostat with emphasis on maintenance. Rapid staining method for frozen section in case of urgent biopsies, Demonstration of fat by oil Red 'O'.

### **MLT 303 BLOOD TRANSFUSION SCIENCE**

**(3 Credits)**

Historical introduction to blood banking. Glassware used in Blood Banking: Types, cleaning and care. Antigen and Antibody: Definition, Types of antigens and antibodies, composition and role of antigen and antibody. The ABO Blood Group System: Antigens and antibodies involved, introduction, formation of ABO antigens, principle of ABO blood grouping, Subtypes (subgroups) of A. The Rhesus Blood Group System: Antigen and antibody involved, Principle of Rh blood grouping, Selection and screening of an ideal blood donor: Blood Collection and Storage, Anticoagulants used, Methods of preservation. Storage of blood, Screening of blood for HIV/AIDS, Hepatitis Antigens, HCV, HAV, VDRL.

#### **Practical**

ABO blood grouping – (Slide and Tube techniques). Direct grouping – slide technique: Direct grouping – tube technique, Indirect (reverse) – tube technique, Subgroup of A - (slide and tube technique). Rh (antigen D) typing (Slide and Tube techniques), Slide technique, Tube technique, Demonstration of equipment/material used for blood collection. Because of highly technical nature and importance of the subject, greater emphasis should be given on practical.

### **MLT 212 INTRODUCTION TO MANAGEMENT, LAB ORGANIZATION & ETHICS**

**(3 Credits each)**

Role of medical laboratory science in total health care, principles of management, techniques of planning, Quality assurance-prepare-analytical control, Internal and external quality control in clinical laboratories, precision, accuracy, standard deviation etc. Safety measures in clinical laboratories (microbiology, haematology, biochemistry, histopathology, blood bank). Human relations: Inter-personal relations, inter-departmental relations and their importance. Medical ethics-legal aspects-confidentiality malpractice/negligence; legal implications, law suits,

consumer protection and insurance for professional health hazards. Preventive maintenance and care of various laboratory equipments. Storage and retrieval of laboratory data with help of computers

### **MLT 205, 214 & 311 CLINICAL LABORATORY POSTING I, II & III**

**(3 Credits each)**

The objective of providing practical training is to:

- i. Create confidence in the students to work outside the training Institution by developing practical skills pertaining to laboratory management and diagnostic skills in the field of haematology, blood banking, clinical chemistry, medical microbiology histopathology and cytology and ensuring laboratory safety and quality assurance.
- ii. Create necessary awareness regarding use of various types of diagnostic equipment, particularly sophisticated ones which are used in the field of medical laboratory services.
- iii. Develop appreciation regarding size and scale of operations, environment and other related aspects like value of team work, interpersonal relations and professional ethics in the field of medical laboratory science.

### **MLT 302 MEDICAL MICROBIOLOGY II**

**(3 Credits)**

General characteristics and classification of medically important fungi. Culture media for fungi. Immunity- Innate and Acquired, Antigens: definition, types and properties. Antibodies - definition, types and properties. Antigen – Antibody reactions (Principle and applications of agglutination, precipitation and flocculation reactions. Serological tests – (Principle, techniques and interpretation): Widal, Rose Waller, Anti streptolysin, C-reactive protein, Rheumatoid factor, VDRL, Rapid and advanced diagnostic techniques, Latex agglutination, Co-agglutination, Immuno-electrophoresis, Quality control in microbiology.

#### **Practical**

Preparation of different culture media used in mycology - Sabouraud's dextrose agar with and without antibiotics, Corn meal agar. To perform staining techniques, to study characteristics of common laboratory fungal contaminants, collection and processing of samples for diagnosis of fungal infections skin, hair, and nail (demonstration for body fluids and secretion)

### **MLT 304 HAEMATOLOGY II**

**(3 Credits)**

Erythrocyte sedimentation rate (ESR) and packed cell volume (PCV). Introduction to: various methods of estimation, ESR and their merits and demerits, factors involved in ESR and PCV, Interpretation of results, PCV Macro and micro methods. Anaemias: Definition and classification of anaemia, Reference range, absolute values, calculation and interpretation, Supravital stain and reticulocyte counting. Introduction to principle and procedure of counting, Normal values. Electrophoresis: Principle and use of cellulose acetate electrophoresis.

**Practical:** ESR estimations (wintrobe and westergren) in blood, determination of PCV (wintrobe and capillary) in blood, counting of Reticulocyte in blood. Sickling test on blood. Demonstration of electrophoresis (cellulose acetate).

### **MLT 306 CLINICAL CHEMISTRY III**

**(3 Credits)**

Formation, conjugation, Principle and procedure of estimation, reference values, normal, out of range and critical values in relation to the following: (Serum Bilirubin, Bile pigments, Alkaline and Acid Phosphatase, Serum amylase, Creatinine (serum and urine), Blood Urea,

Uric Acid, Electrolytes, AST, ALT, Total Protein, Albumin, etc). Other Renal Function Tests, functions of kidney, Creatinine clearance test and urea clearance test. Urine Analysis: Normal composition of urine and its properties, clinical importance of urine analysis, determine the presence of abnormal constituents like protein, sugar, bile salts and bile pigments (bilirubin and urobilinogen), quantitative estimation for proteins, identification of sugars, detailed discussion on glycosuria and albuminuria, ketone bodies. Stool Chemistry: Physical characteristics and chemical composition of stool, significance of presence of blood and excess fat in stool, occult blood detection. Basic Automation.

## **Practical**

Serum bilirubin estimation, Serum uric acid estimation, Creatinine estimation in serum and urine, Alkaline and Acid Phosphatase estimation, Serum amylase estimation

Serum inorganic phosphate estimation, Serum calcium estimation. Analysis of urine for sugar and proteins (qualitative and quantitative). Detection of ketone bodies in urine, detection of haematuria, detection of bile pigments (bilirubin and urobilinogen), occult blood test for stool specimen.

## **MLT 308 HISTOPATHOLOGY III**

**(3 Credits)**

Quality Control in Histopathology and Cytology. Automation in Histopathology: Embedding station, automatic tissue processor, automatic knife sharpener, automatic staining machines, Collection, processing and fixation of various cytological specimens. Collection and preparation of cervical and vaginal smears. Staining of cytological specimen smears: Papanicolaou stain (PAP), May Grumwald-Giemsa stain (MGG), Haemotoxylin and Eosin stain (H&E),

## **Practical**

Preparation of mounting solutions, preparation of different types of smears (dry and wet, demonstration of PAP staining, demonstration of MGG staining, demonstration of H&E staining, demonstration of PAS staining, demonstration of Z-N staining, demonstration of Alcian blue PAS, demonstration of Mayer/s mucicarmine staining.

## **MLT 309 SEMINAR IN MEDICAL LABORATORY SCIENCE**

**(3 Credits)**

Students will be exposed to techniques involved in seminar writing, use of computerized data retrieval systems, and use of libraries, slide and over-head projectors. Students will be provided seminar topics by the Department and will be expected under supervision to locate relevant publications review and present a bound copy of the seminar write-up, which will be examined by a Departmental jury. Seminar presentation will constitute 30 marks while the write-up will be graded over 70 marks.

## **MLT 312 RESEARCH PROJECT**

**(6 Credits)**

Students will be provided research topics by the Department and will be expected to present a bound dissertation of their research work, which will be examined by a Departmental jury. Research presentation will constitute 30 marks while the write-up will be graded over 70 marks.

### **SELECTION OF TRAINING PLACES**

The institution offering the programme should establish contact/rapport by personal visit to following types of organizations:

- i. Hospitals at District Headquarters having well equipped laboratory
- ii. Hospitals in private sector
- iii. Well established clinical laboratories being run by qualified person(s)

### **METHODOLOGY OF ORGANIZING PRACTICAL TRAINING**

Each concerned teacher will be responsible for a group of students in the respective specialty to plan, supervise and monitor the progress when placed in different organizations for practical training. For this purpose, necessary recurring expenditure between the faculty of institute and the experts may be worked out by respective institutes, keeping in view, number of visits and the distances involved in such travelling. The concerned teacher will have to continuously interact with training centres to monitor the progress of the students

## EVALUATION OF STUDENTS FOR PRACTICAL/PROFESSIONAL TRAINING

***a) The criteria for internal assessment should include:***

- i. Attendance/Punctuality
- ii. Proficiency in conducting laboratory test
- iii. Preparation of portfolio on day to day work done in various laboratories
- iv. Initiative/responsibility exhibited
- v. Interpersonal relations
- vi. Behavior/attitude
- i. Maintenance of equipment and work place

***b) External examiner along with internal faculty should evaluate the student's performance through written, practical and oral to include:***

- i. Medical Microbiology/Parasitology
- ii. Clinical Biochemistry
- iii. Haematology / Blood Transfusion Science
- iv. Histopathology/Histochemistry

## SECTION TWO

### EXAMINATION GUIDE AND MISCONDUCT

#### 4.1 EXAMINATION REGULATIONS

The institution requires a high standard and academic excellence is the focus of her manpower development. The examination regulations outlined below are therefore aimed at meeting the above objectives to ensure an orderly, fair, consistent and accurate assessment of the students.

#### 4.2 EXAMINATION GUIDELINES

- a. Essays, practical and any type of examinations shall be administered as appropriate
- b. In order to be admitted for an examinations a student must have been registered for the relevant course unit and also satisfied the college attendance requirement of 75% of the total attendance and has fully paid all his/her school fees/rates.
- c. The student who has satisfied paragraph b above may be admitted into examination hall on permutation of his /her student Examination card.
- d. The right of a student to appear at and sit for the college examination may be withdrawn by the Academic Board of the college if he/she contravenes the followings;
  - (i) Attendance in classes is inadequate (75% is Mandatory)
  - (ii) Dressing does not conform with the school's dress code
  - (iii) Unruly behavior in the examination hall
  - (iv) Suspension
  - (v) Examination Malpractice
- e. A student may only be exempted from an examination on presentation of
  - i. A written application accompanied by a medical report / certificate from recognized Government Hospital or the college sick-bay.
  - ii. In emergency or accident cases, students are expected to present medical reports from recognized Government Hospital that treated them.
- f. Any student that is duly exempted from an examination as determined by the Academic Board may be allowed to carry over such course (s) to be written as first attempt.
- g. Any student who absents himself / herself from any school examination without reasonable cause shall render him/her liable to repeat the semester or session.
- h. Student shall be seated in examination halls according to their examination numbers.
- i. No candidate shall be admitted into the examination hall after thirty (30) minutes into the examination.
- j. No student shall leave his/her seat before thirty (30) minutes.

- k. All candidates shall sign attendance register for the examination and must be seated in the examination hall five (5) minutes before examination starts and must stop writing when told to do so.
- l. At the end of every examination, all candidates shall leave their answer scripts on their desks and quietly leave the examination hall.
- m. A candidate who leaves examination hall at will, while examination is in progress shall not be readmitted into the hall.
- n. All rough work shall be done at the last page of the answer booklet and not question paper, provided that the rough work will be neatly cancelled at the close of the examination and provided that no extra paper shall be brought in or taken out by the candidate
- o. Any answer script without matriculation/registration number shall not be marked
- p. Candidate shall display their clearance forms on the desk during examinations.
- q. The college reserves the right to punish any student who contravenes any of the above rules.

#### 4.3 EXAMINATION MISCONDUCT

The following acts/conducts shall be treated as examination malpractice/irregularities

- a. Impersonation
- b. Possession of printed, handwritten or any extraneous materials in examination hall whether used or not.
- c. Reading or copying from a printed or handwritten material. And, writing or doing rough work on question papers instead of within answer booklet.
- d. Use of scripts other than those designated and issued out by the authorities for the examination
- e. Appearance of different handwritings in a student's answer script
- f. Submission of more than one script by a candidate in an examination
- g. Exchange of ideas or materials during examination and in the examination hall e.g. all forms of communication between candidates.
- h. Obstructing the invigilator/supervisor or any accredited official of the school from performing his/her duties relating to the conduct of examination
- i. Refusal to submit oneself searching at the instance of the invigilator/supervisor or any accredited officer of the school
- j. Receiving from or giving assistance to another candidate in examination
- k. Destruction or attempt to destroy evidence
- l. Leaving examination hall without due permission
- m. Causing disturbances during examination
- n. Using another candidate Matriculation/Examination number
- o. Involvement by members of staff of the school in any the foregoing provisions
- p. Any other miscellaneous offences.

- q. All forms of bribery and or intimidation by any student/staff or its abetment for the purpose of passing examinations are punishable with dismissal from the school.

#### **4.4 PROCEDURE FOR HANDLING EXAMINATION MALPRACTICE CASES**

Where it is alleged that a Student has Committed Examination Malpractice the Following Procedure shall be followed:

- a. if such malpractice is in the course of an examination, the student shall be given a malpractice form to fill. The illegal materials should be attached to the candidate's examination question paper and the answer scrip shall be collected from him/her. After the student has written his/her views on the alleged malpractice in question, a fresh set of questions and answers sheet will be the given to him/her to continue with the examination and 10 minutes compensation be given to the candidate. The invigilator (s) shall through the school examination officer forward the case to the examination malpractice committee forth with.
- b. If the malpractice is discovered before or after completion of the examination, a report covering the nature of the malpractice shall be forwarded immediately to the examination malpractice committee for consideration.
- c. The examination malpractice committee shall hear from the student (s) involved in the malpractice by receiving both written and oral testimony from him/her if she/he agrees to so testify.
- d. Refusal/failure of the candidate to respond and or appear does not debar the examination malpractice committee from determining the case appropriately provided that due notice was served on him/her.
- e. after proper consideration of case the Examination malpractice committee shall covey its findings to the academic Board for its consideration and determination.
- f. The Academic Board after due consideration of the Examination malpractice committee's findings can exonerate or inflict appropriate disciplinary actions/measures against the student (s).
- g. The Exercise of disciplinary power herein shall not prejudice the powers of the school management to refer any case of examination malpractice to the law enforcement agents for further appropriate action.

#### **4.5 PRESCRIBED PUNISHMENTS GOVERNING EXAMINATION MALPRACTICE**

Violation of any of the aforementioned examination malpractice/ irregularities shall be punished as followed:

- i. Expulsion: candidates found guilty of Examination malpractice in section (a-d), (i-m) (p and q) shall be expelled from the school.
- ii. Candidates who are involved in section (e-h), (n and o) shall have their papers for the particular papers cancelled.
- iii. Any staff involved in examination malpractice/irregularities shall be referred appropriately to the management committee for necessary action by examination malpractice committee.

#### **4.6 EXAMINATION PETITIONS**

- a. Petitions can be filed in by the invigilator/supervisor or any staff/student who witnessed the alleged crime.
- b. All examination petitions shall be handwritten and signed by the petitioner.
- c. All examination petitions shall be addressed to the chairman Academic Board through the Examination officer of the school.
- d. No petition shall be entertained after expiration of seven days from the date of publication of the examination results in question.
- e. The provisions of these examination regulations herein shall be subject to amendment from time to time by the Academic Board of the school in the manner deemed fit.

#### **4.7 REPEAT/CARRYOVER/DEMOTION/WITHDRAWAL.**

All cases under subsection will be determined as provided by the appropriate regulatory bodies.

##### **4.7.1 CUMULATIVE GRADE POINT AVERAGE**

Different courses within the school have different grading system; therefore it will also be determined as provided by the appropriate regulatory bodies.

##### **4.7.2 Performance Assessment Grading**

Assessment: Test, Quiz, takes 30% while examination is 70%

#### Requisite for issuance of credentials

- i. Property clearance signed by Officers concerned.
- ii. Academic clearance signed by Academic Dean.
- iii. Student Affairs Officer sign
- iv. Registrar sign
- v. Librarian sign
- vi. Receipt of payment of all school fees and rates including bursar
- vii. Presentation of self. Credentials are not received by proxy.

**SECTION THREE**  
**STUDENTS CONDUCT**

**6.1 CHANNEL OF COMMUNICATION**

**i. ACADEMIC MATTERS**

Students should discuss their academic problems with the appropriate Course Coordinators. If there is need for any communication to the higher authority, it should be done through the Course Coordinator.

**li(a). ADMINISTRATIVE MATTERS**

For all administrative matters, students should discuss with the Dean of Student affairs. Should the need arise for communication to the higher authority; such communication must be routed through the Dean of student affairs.

- (b). In case of group discussion with the management, briefs on the issue of discussed must be submitted to the Registrar of the school at least 72 hours in advance, also the appointment must be first sought and obtained. All this must be done through the Dean of Student Affairs.

**6.2 STUDENT/STAFF RELATIONS**

School staffs are NOT subject to order and or abuse from Students. However, Staff that refuse to carry out their assigned duties, which affect students, should be reported to their appropriate Course Coordinators for appropriate sanctions as determined by the school management.

**6.3 FIGHTING**

All form of fighting, mobbing, thuggery and abusive language in the college premises are strictly prohibited; any violation attracts suspension/expulsing as deemed by the school authority.

**6.4 CRIMINAL ACTIVITY**

All proven cases of criminal activity from staff/students are prohibited by the college authority.

**6.5 SCHOOL PROPERTY**

Any student who damages school property shall replace such property forthwith.

## **6.6 SECRET SOCIETIES AND CULTS**

- i. A society is deemed secret if the school does not approve of its existence.
- ii. The existence of secret societies or cults in the school is prohibited.
- i. Any student or group of students who form, attempt to form, belong to, initiate another, or has anything connected with or indicating that he/she is a member of a secret society or cults shall be dismissed from the college and handed over to the law enforcement agents.

## **6.7 DRESS CODE**

The school is a Health Institution and as such the dress code is a decently tailored uniform. Therefore, all students should be in uniforms with identity cards strategically hung as part of the uniform. Remedial students are for the time-being will not be in uniforms.

- i. Ladies are not allowed in trousers of whatever nature.
- ii. Indecent dressings within the school is highly prohibited.
- iii. Any dressing that exposes the body contour/supposed hidden parts of the body are deemed indecent/seductive and accordingly prohibited.
- iv. Indecently dressed students shall be identified by staff/security members and refused entry into lectures and even school premises.
- v. Any student who persists in indecent dressings may be suspended/expelled from the school.

## **6.8 Sanitation**

Students should maintain a high standard of health at all times. Toilet paper and water should always be used in the toilet to avoid blockage. Students must ensure that their immediate surroundings are kept clean.

## **6.9 Smoking and Drug Abuse**

- i. Smoking is strictly prohibited for all students in lecture rooms, library, school clinic, students' hostels and other public places.
- ii. Students found smoking Indian hemp or taking unprescribed narcotic drugs shall be dismissed from the school.
- ii. Any student misbehaving under the influence of alcohol/drugs shall be suspended/expelled from the school.
- iii. The school does not permit the sale/consumption of alcohol by students on the school premises. A contravention attracts suspension/dismissal from the school.

## **6.10 Hostel Regulations**

- i. Students hostels shall always be kept tidy. Students are responsible for the tidiness of their room and surroundings.
- ii. The school has limited accommodation for female for the time being and is therefore not obliged to provide it for all such students.
- iii. Accommodation for students is optional
  - i. All illegal occupation of hostels is strictly prohibited. Any contravention attracts suspension/expulsion from the school and payment of damages for such illegal occupation. Any student suspected of hosting illegal occupant(s) shall lose her right to accommodation.
  - ii. Acceptance of hostel accommodation implies acceptance of hostel rules
  - iii. Students are not allowed to stay with their spouses, friends or relatives in the hostel. Offenders will lose their rights of accommodation.
  - iv. Students must not unilaterally change their hostel/rooms but live in the rooms allocated to them or forfeit their accommodation.
  - v. Illegal electrical connections are prohibited. Needs for such must be communicated to the student Affairs Officer. Any student that causes damages in the hostel as a result of illegal connections will be surcharged and will also be suspended for the school
  - vi. Partitioning of hostels rooms is strictly prohibited. Offenders shall lose right of accommodation and/or suspended for one semester.
  - vii. Hostels must be vacated at the end of each semester/session unless a written permission is sought and obtained from the management.
  - viii. Any student living in the hostel who wants to be absent from the school for a night or more shall first seek and obtain permission from the Student Affairs Officer. Any default attracts suspension from the hostel.
  - ix. Staying outside the campus is not a prerequisite for unruly behaviour. Any misbehaviour outside the hostel will be viewed with all seriousness.

## **6.11 Identity Cards**

- i. It is the duty of each student to possess the school identity card. All registered students must obtain the school officially signed, stamped and sealed identity card from the Student Affairs. Production of identity card is a must for official transactions like, writing of exams, collection of results, and should be displayed on them at any time.
- ii. Issuance of departmental, club/association and other identity cards is totally prohibited. Any club/association contravening this regulation will have its registration nullified.

## **6.12 Criminal Offences**

- i. Any Student convicted or found to have been convicted of a criminal charge in any court of law of competent jurisdiction shall be expelled from the school
- ii. Any Student alleged to have been involved in a criminal offence will be handed over to the law enforcement agents for proper investigation and such student will be suspended from the school pending the determination of the case.
- iii. If such student is later found guilty of the offence by a court of competent jurisdiction then he/she will be dismissed from the school.

### **6.13 Forgery**

- i. No student shall forge any document
- ii. Any student that forges a document shall suspended/dismissed from the school.

### **6.14 Immoral Sexual Activity**

Any student who is involved in: -

All forms of sexual immorality within and outside the school among both staff and students are prohibited and punishable with dismissal from the college.

### **6.15 Pregnancy**

Pregnancy during training is prohibited. Married female student may become pregnant during training provided they can cope with studies. Unmarried female student, who happen to become pregnant shall be withdrawn for the training.

### **6.16 Abortion**

To commit abortion is a criminal offence under the laws of the land, it is also immoral, any student found to have committed abortion either in the school or at home as well as during practical, will be dismissed from the school.

### **6.17 Punctuality**

- i. Students shall be punctual at all times to lectures, games and all other school events.
- ii. Students who persistently absent themselves from lectures etc without permission shall be subjected to disciplinary actions.

### **6.18 Out of Bounds**

All stores, bursary department, admissions office, examination office, typing pool and the printing room etc are out of bound to all students except when officially invited.

### **6.19 Disciplinary Committee**

There is a disciplinary committee for the school made up of the following:

- |    |                   |   |           |
|----|-------------------|---|-----------|
| 1. | Deputy Provost    | - | Chairman  |
| 2. | Registrar         | - | Secretary |
| 3. | Course Coodinator | - | Member    |

The disciplinary Committee of the school is charged with the responsibility of looking into issues referred to it as may be directed by the college departments. The reports of the disciplinary committee are forwarded to the management for necessary action.

### **6.20 Security Service**

The security Department of the College is provided to protect the life of all staff and students as well as the properties of the College.

The department provides a twenty-four (24) hour security service within the college premises only. Students are advised to be mindful of the type of person that visits them and should enjoin them to submit themselves for security check at the gate of the school.

The school gate is usually locked by 10.00pm and no student is expected, if not in the hostel, to stay on the college campus after this time.

### **6.21 Students Administration**

The Student Affairs Officer heads the student affair Officer handles the day to day issues of students including their associations, clubs, union etc he also supervises and co-ordinates activities in the division and attends to all matters relating to the welfare of students generally. The division is made up of the following units:

#### **i. GENERAL STUDENTS ADMINISTRATION**

This is the unit that handless the day-to-day issues from students like welfare, counseling and advising students with problems.

#### **ii. STUDENT'S RECORDS UNITS**

This unit is responsible for keeping record of all students

#### **iii. SPORTING UNIT**

This unit takes care of all sporting activities of the school. The Student Affairs Officer however, refers very serious decisions to the sports committee of the school. The Deputy Provost is the Chairman of this Committee.

**iv. HOSTEL UNIT**

This unit is responsible for all matters relating to student's accommodation.

**6.22 Kitchen Rules**

- i. Students are responsible for their own feeding arrangement
- ii. Fire and cooking are not allowed in the hostel rooms.
- iii. All cooking must be restricted to the kitchen provided.
- iv. Violation of *ii.* and *iii.* above attracts ejection from the hostel, or even expulsion.

**6.22 Electrical/Musical Appliances**

- i. No Electrical appliance should be used without registration with the Student Affairs Department.
- ii. Ironing in the classrooms is strictly prohibited
- iii. Musical Equipments are only to be used where they do not disturb fellow members of the school community.
- iv. All appliances used without registration will be confiscated.
- v. Violation of *i.* and *iv.* above will attract necessary disciplinary action.

**6.23 Damage and loss of property**

- i. No electrical appliance should be used without registration with the student Affairs Department.
- ii. Ironing in the classrooms is strictly prohibited
- iii. Musical Equipments are only to be used where they do not disturb fellow members of the school Community.
- iv. All appliances used without registration will be confiscated.
- v. Violation of *i.* and *iv* above will attract necessary disciplinary action.

**6.24 Damage and Loss of Property**

- i. Students will be held responsible for loss or damage to any school Property which loss or damage is rooted (traced) to him/her.

- ii. All items issued to students remain property of the school and are subject to inspection at any time by the school staff.
- iii. The college is exonerated from liability for loss of student's property on the college premises
- iv. Loss of Student's property on the school shall be reported to the security unit of the school.

### **6.25 Change of Name**

Any student wishing to change his/her name(s) should bring the following:

- i. An affidavit sworn in a court of law.
- ii. Certificate of dissolution of marriage as the case may be
- iii. Declaration of marriage or marriage certificate
- iv. Application for change of name and evidence of payment of prescribed fee as determined by the college.
- v. Evidence of publication in any of the Nigerian National Dailies.

### **6.26 Pets**

On no account should students keep pets of any kind on the school premises. All pets kept by a student on the school premises will be seized by the school authority.

### **6.27 Information/Notice Board**

- i. It is the duty of every student to read these regulations and other directives that may appear on the notice boards and take note of the information.
- ii. If however, a student finds no definite information about any particular matter on the notice board, it is the duty of such student to consult the appropriate office for same.
- iii. Approval for posting and or removal of notices on the following as appropriate
  - a. The Dean Student Affairs for posting on and or removing from the general notice boards and trees.
  - b. The appropriate head of department for posting on and or removing from department notice boards.
  - c. Any student who posts or removes notices, articles or cartoons on or from the notice boards or trees without permission shall be punished.

## **6.28 Miscellaneous Provisions**

- a. The school permits the formation of societies, club and associations but their constitution and bye-laws must first be approved by the management, default of which such organizations will not be recognized by the school and be treated as such.
- b. Whenever club/societies are formed and whenever fresh elections are held, the list of officials shall within two weeks be sent to the Registrar of the school through the Dean student Affairs. Any default renders the club/association unrecognized by the school authority.
- c. The school will ban any organization whose continued existence is not in the interest of the college community.
- d. In the even of an organization inviting an outside performer, approval from the school authority must first be sought and obtained at least two weeds from the date. Where the school has reasons to suspect that damage may be done to the college property during any function, the school may demand a refundable deposit against such anticipated damage.
- e. All societies, clubs, associations must first register with the school and renew their registration on a by the beginning of every session. Failure to register or renew registration will render the organizations illegal.
- f. All student organizations must have an adviser who must be a staff of the school. The adviser's consent must be sought in written, and obtained.
- g. Political organizations are not allowed in the school. Any contravention attracts suspension /expulsion.
- h. Clearance for organizing a particular activity by an organization must be obtained from the student Affairs Dean which clearance must be commencement of the activity.
- i. When an important personality from outside the school is invited for an occasion, the approval of the school authority must first be sought and obtained at least two weeks before the day the guest is expected to arrive on the campus.
- j. All officers of Student's organization/student union must provide evidence of good academic standing i.e. not less than 2.50 CGPA and good character standing before and even after the election.
- k. The school encourages and promotes humanitarian/academic association while tribal and sectional meetings and association ate totally banned.

**SECTION FOUR**  
**THE SCHOOL LIBRARY**

**5.1 LIBRARY RULES AND REGULATIONS**

Membership of the library is restricted to students and senior staff of the college. They are the only eligible people to read in and borrow books from the library.

**5.2 OPENING HOURS**

a. *DURING THE SESSION*

Mondays Fridays: 8:00am 10:00pm

Saturdays 8:00am 06: 00pm

b. *DURING BREAK*

Mondays Friday 8:00am 04:00Pm

c. *SUNDAYS AND PUBLIC HOLIDAYS*

The library remains closed on Sundays and public holidays.

**5.3 ELIGIBILITY FOR REGISTRATION**

- A. *STAFF*: A staff may be registered on presentation of an identity card and or a letter of appointment.
- B. *STUDENT*: A student's registration will be based on the presentation of admission letter, evidence of registration in the college and two passport photographs. At the end of registration exercise, a student is issued with a library identity card and two borrower's cards or tickets.

**5.4 LOAN OF BOOKS.**

Readers are entitled to borrow the following maximum number of books at a time.

- a. Senior staff books
- b. Junior staff 2 books (library staff only)
- c. Student 2 books
- d. Reference books, reserved books, maps and journals are only used in the library.
- e. Staff wishing to disengage from the services of the college, shall be cleared with the school library before doing so.
- f. Graduating students shall be cleared with the library before their results are released to them.

#### **4.5 HOW TO BORROW BOOKS.**

Borrowing is conducted at the circulation desk.

Books to be borrowed are presented to the library staff behind the desk. Staff and students who may wish to borrow a book(s) must present a ticket / card for each book she/he intends to borrow and his/her library identity card, which show that she/he is a registered reader. A student is entitled to a loan period of two weeks subject to renewal if same is not required by another reader. The loan period for staff is one month. The book(s) shall be stamped with the date on which it (they) must be returned, default of which the borrower will pay a fine. Reminders of late books in the form of over due notice are normally courtesy, failure to receive one does not exonerate one from any time.

#### **4.6 FINES**

- a. Staff members with overdue library books shall be surcharged N100.00 per day.
- b. Student shall be surcharged N50.00 per book per day.
- c. Fines shall be paid within two days of notification. No further borrowing will be allowed unless and until the existing fines are paid. Failure to pay fines may attract suspension from the use of the library.

#### **4.7 RESERVED BOOKS**

Books and other materials in great demand may at request, be kept in the reserve book unit so that as many request as possible may have access to them. To use a book on reserve, the user should fill a request slip available at the counter and hand it together with his/her identity card to the officer in charge who will then supply him/her with the book if available. If it is not available, he/she will be told when to check again. The reader after supply may keep the book for up to two hours in the first instance after which he/she should check at the counter whether or nor its required by another reader, if not the reader may renew it for another two hours.

A full list if books held in this unit can be got from, the circulating staff.

#### **5.8 LOST BOOKS**

Readers are responsible for the safe keeping of all library books in their possession and are required to pay for replacement in the event of loss or damage. If a reader loses a book, it should be reported immediately to the circulating librarian. A period of time will then be allowed for the reader to search for the missing book.

Refusal to pay for lost materials will be referred to the management we the result of loss of borrowing privileges. Loss of ticket/identity card should also be reported immediately at the

circulating desk. A replacement may not be issued until after two weeks from date of the loss on payment of 100.00. Payment for lost material shall be the current price of the material plus any over head cost.

## **5.9 MUTILATION AND THEFT OF BOOKS AND MATERIALS**

Serious anti-social activities such as theft and mutilation of materials especially serials and out of print books impair the usefulness of these publications not only for present readers but especially with the serials and out of print books for future generations of users since such publication often cannot be obtain again at any cost. As such, any person found guilty of such an offence will face severe disciplinary action. To discourage such ugly practices library staff shall continuously supervise all reading areas.

## **5.10 GENERAL REGULATIONS.**

- a. Books and journals consulted in the Library should be left on the tables after use to be returned to their correct places on the shelves by a team of trained staff and thus can be easily located again by other readers
- b. A reader who changes his/her name must first re-register with the library under the new name
- c. Silence must be observed in and around the library at all time.
- d. No reservation of seats, a reader can occupy any seat not physically occupied.
- e. Eating, drinking, smoking etc are not permitted in the library.
- f. Books on loan to any reader may be recalled before the expiration date if need arise and such books must be returned without delay while default attracts a charges of N100.00 per day.
- g. Pets are not allowed in the library.
- h. No book may be removed in the library unless it has been properly charged out at the circulating desk.
- i. Readers must enter and leave the library by the main entrance
- j. Brief cases, bags, personal files and other baggage's must not be taken into the library but deposited on the tables by the entrance to the library at owner's risk.
- k. Any reader leaving the library must submit himself or herself for searching by the library staff on duty. Any library item found on him/her during the search will have regarded as an illegal removal of such item which act attracts appropriate sanction. Refusal to be searched is also punishable offence.
- l. The library must be kept clean at all times.
- m. Tickets remain the property of the library. They are to be used only by the reader for whom they have been issued out and must be surrendered on final departure from the college.
- n. Loitering in and around library is not permitted.

- o. Examinations/tests may be taken/administered in the library on consent and authority of the librarian or his representative which consent must be sought and obtained in good time.
- p. Readers must not move library chairs and tables from their positions.
- q. Students must not enter staff offices and any part of the library marked “*PRIVATE*” or “*RESERVED FOR STAFF ONLY*” except by permission.
- r. Library books should not be defaced by marking them with pen, pencil nor should pens or other bucky objects be used to mark a place in a place in a book, nor should a page of a book be folded.
- s. Radio tape recorders, silent or explosive missiles and the not under any circumstance be brought into the library. Handsets should be put off or on silence and or should not be answered while the student is in the library.

### **5.11 DISCIPLINE**

- x. A combined team of library staff and security men may make a surprised visit to student’s hostels and staff offices in order to check unauthorized library materials and retrieval.
- xi. Contravention of thereof in their possession, library regulation from both staff and student shall be punished by suspension from the library for a period deemed fit by school.
- xii. Any staff that refuses to pay charges/fines will have the amount deducted from his/her monthly salary whereas students will have their results withheld.

### **5.12 SERVICES PROVIDED BY THE LIBRARY**

- iv. **PHOTOCOPYING:** photocopying services are available at the token fee in the library. There may be variations as market forces dictate. Copyright regulations must however, be observed
- v. **BINDERY UNIT**
  - a. The library has a bindery unit to cater for the binding needs of the students and the public as well.
  - b. Commercial bookshops and publishers may from time to time be invited by the college authority to display books for interested students to buy.
- iii **COLLECTION DEVELOPMENT**
  - a. The library welcomes all suggestions for addition to its existing stock. Such suggestions should be made to the school librarian.
  - b. Recommendations could also be placed in the suggestion box, which will strategically be located at the entrance of the library.

### **5.13 NEW BOOKS**

New additions to the stock of the library are displayed near the circulation desk for one week before they are made available for loan and are placed on the shelves with the rest of the books.

Readers are welcome to examine these new books and to fill out a reservation card for any one they want to borrow when the one week display is up. The aim of this display is to introduce the readers to the new additions to the stock of the library.

#### 5.14 **REFERENCE UNIT**

The reference unit is the library. This unit helps readers to find information they require. The materials here are not to be loaned out to readers but are to be consulted within the reference section only. Staff readers who are to ask for interaction in the use of the library to enable them help themselves as much as possible.

## **SPORTS AND GAMES**

- i. All students are at liberty to participate in sports and games of their choice.
- ii. An annual non-refundable subscription fee for sports fixed by the school management is payable during registration.
- iii. The sports and games committee of the school shall direct expenditure from the sports fund on advice of the school coach. The purchase of the sports equipments and provision of physical facilities shall be by the college authority.

### **6.1 DEATH**

- A. Where a student dies while in the school, the school has responsibility to inform his/her family.
- B. The school may make arrangement and Transport students to the burial of such a student.
- C. If a student dies while at home or during holidays, a delegation may be sent to represent the students at the burial

### **6.2 VISITORS**

- i. Students shall be responsible for the conduct of their own visitors.
- ii. Female students are at no time allowed to receive male visitors in their hostel rooms.

### **6.3 GENERAL**

- i. All waste bills should be dropped in the dustbins provided.
- ii. The school does not permit the sale/consumption of alcohol on the school premises.
- iii. The police shall handle all criminal offences committed by a student outside the college compound.
- iv. All students who terminate their contract with the school with no fault of the college should expect no refund of any kind.
- v. These rules and regulations are subject to review and amendment as circumstances permits.
- vi. It is the duty of every student of the school to read and observe these rules and regulations. Any violation thereof attracts punishment, ranging from suspension to expulsion/dismissal from the college.

## **6.5 MATRICULATION/GRADUATION**

- i. New Students admitted into the school will undergo a matriculation after given an orientation; a token thereof is paid for matriculation gown.
- ii. At all successful completion of a course study, students are usually graduated at a ceremony called convocation, a token is paid for gowns which are returned immediately after usage. At the ceremony prizes, certificates and awards are presented.

## **6.6 STUDENTS FEES**

Tuition fees payable in the school depends on the course of study a student is pursuing and also on the number of years a student is staying in the college. This is usually disclosed to the students in the admission letter.

## **6.7 BASIC EQUIPMENT**

All Students are expected to have the followings: -

- a. Furnishing and utensils for living accommodation.
- b. A wrist Watch
- c. Writing materials
- d. English Bible (RSV or NIV)
- e. Golden bells song book/SS and S
- f. English Dictionary
- g. Medical Dictionary

## **6.8 UNIFORMS**

Uniforms are provided by students as specified by the school.

A.

*Males:* Navy Blue trousers with navy blue tie and black shoe.

*Females:* Milk color gown with sleeves and pockets, black shoe flat sole.

## **6.9 PRACTICAL TRAINING**

Practical training is compulsory for all Medical Laboratory Technicians students.

## **SECTION FIVE**

### **STUDENTS CLUBS AND ORGANIZATION**

#### **7.1 STUDENT UNION**

The student's union administers and protects the interest of the entire student's body. It serves as the bridge between the union and school authority provides a democratic arrangement for the attainment of leadership positions within its organs. Membership to the students union office is however optional.

The student's union activities are controlled as follows: -

- i. The union's non-refundable subscription fee per year per student is payable to the union during registration.
- ii. The union expenditures are controlled by the officers on the advice and supervision of the Student Affairs Officer.
- iii. The students shall elect their union officials
- iv. The provost and the Dean Student Affairs shall hold consultations with the union officials on matters affecting them.
- v. The student Affairs Dean shall be the liaison Officer between the students and the school authority.
- vi. No student officer should show any act of insubordination or retire himself/herself from the post unconstitutionally. This offence attracts suspension and expulsion from the school.
- vii. Only constructive criticisms, which should be duly signed, must bear the proper names and address of the student and should be address to the secretary General of the union
- viii. The Students Union Executives shall be dissolved at the end of the tenure of office and their books brought up to date. The school auditors shall audit the books and advice appropriately.
- ix. The following posts shall be available for contest during elections and announced by the Student Affairs Dean who shall be the returning Officer: -
  - The President
  - Vice President
  - Secretary
  - Assistant Secretary General
  - Financial Secretary/Assistant Financial Secretary
  - Auditor I/Auditor II
  - P.R.O
  - Social/Welfare officer.

#### **7.2 STUDENT UNION GOVERNMENT**

## **ELIGIBILITY FOR ELECTIONS**

For a candidate to vie for the student union elections, she/he must possess the following:

- a. He/she must be a registered student
- b. She/he must have high moral standard
- c. She/he must be academically sound, i.e. she/he should have no carry overs and should have a CGPA of NOT less than 2.5.
- d. She/he must have the ability to work in a team
- e. She/he should not be indebted or defraud the school
- f. Election is opened to all departments and on merits not alternating or rotational but free for all.

### **7.3 MODE OF ELECTIONEERING CAMPAIGNS**

Those who wish to vie for an elective post shall purchase forms in the early part of first semester, while screening of candidates comes up a month after stoppage of sale of forms. Only those who are successful at the screening exercise shall canvas for votes from their fellow students by way of campaigns which must be devoid of ethnic, tribal, or sectional sentiments.

All those who are contestants in an elective post must be made to give their manifestoes in front of all the students on a manifesto day organized by the students' Union Council in liaison with the Dean of Students Affairs where academic and non-academic staff of the college will be in attendance.

All forms of campaign must stop on the eve of the election, on the Election Day, any form of overt or covert canvassing for votes as well as all forms of electoral malpractices will not be condoned, for e.g. exchange of gifts, money etc.

### **7.4 SCREENING COMMITTEE**

The screening and election committee shall be selected by the Deputy Provost.

### **7.5 MODE OF ELECTION**

Either secret or open ballot system may be used for the purpose of election; counting of votes shall commence immediately and the result announced almost immediately.

## SECTION SIX

### DEFINITION OF TERMS AND HANDBOOK REVIEW COMMITTEE

#### 8.1 DEFINITIONS

“*The College*” Means Makurdi College of Health and Medical Laboratory Science

“*Student*” means a person who has been admitted and has duly completed all matriculation formalities to undertake a programme with the college.

“*The Provost*” means the Head of the College

“*Registrar*” means the Secretary of the College

“*Semester*” a semester is made up of a minimum of 16 weeks of teaching, assessment and examination

“*Semester examination*” This consist of tests, assignments, quiz etc and examination taken at the end of the semester.

“*Course work*” means lectures, tutorials, seminars laboratory work, assignments, practicals etc. taken during the semester.

This student’s rule and regulations handbook is subject to review from time to time.

#### 8.2 MEMBERS OF THE HANDBOOK REVIEW COMMITTEE

- |                        |                                |
|------------------------|--------------------------------|
| - Mr. Bam Adeke I      | - <i>Chairman</i>              |
| - Mr. Iyoryinasha Ugor | - <i>Secretary</i>             |
| - Mr. Uche C. Y        | - <i>Member</i>                |
| - Chaplain             | - <i>Member</i>                |
| - Barr. Iorlaha Ututu  | - <i>Legal Adviser/Member.</i> |

**DECLARATION**

This is to certify that I, Mr./Miss/Mrs. \_\_\_\_\_  
have read the College rules and regulations guiding the students of Makurdi College  
of Health and Medical Laboratory Science, Benue State and has agreed to abide by  
them during the period of my training.

\_\_\_\_\_  
Student's Signature/Date

\_\_\_\_\_  
Provost's Signature/Date