

Minimum Requirements
For the recognition of
Bachelor
in
Clinical Pathology
(BMLT/B.Sc MLT)

Nepal Health Professional Council
Bansbari, Kathmandu, Nepal
Second Revision 2076 (2019)

Preface

The Nepal Health Professional Council was established under the Nepal Health Professional Council Act 2053 Bikram Era. Nepal Health Professional Council Act has paved the way to regulate the health Professionals except doctors and nurses. Its primary purpose is to protect the public by providing quality health service.

The Nepal Health Professional Council is the regulatory body for the professionals. As the statutory authority, Nepal Health Professional Council Act 2053 Bikram Era sets out condition for the registration of all health Professionals except doctors (eligible to register in Medical Council) and nurses. The Act prohibits any health profession practice without being registered with Nepal Health Professional Council. The Health Professional Council maintains register and those who are registered are granted with practicing certificate. The other important function of this Council is to prepare minimum requirements for the recognition of all level Health Professional Education programme.

The responsibility of quality control of the health professional education in the nation lies in the hands of NHPC. According to the legislative mandate, the NHPC is to make policies of terms and conditions of admission criteria, syllabus, examination conducting system related policy and method of evaluation of any Health Professional Educational at all levels.

Hence, in order to carry out these functions as mentioned in NHPC Act (2053 A. D.), NHPC had formed a committee to revise the minimum requirements for the recognition of Bachelor in Medical Laboratory Technology (BMLT/BScMLT).

The followings experts were involved in the revision:

Coordinator Mr. Ganesh Prasad Acharya MSc.MT (Pathology with Cytology), Prof. Dr. Bharatmani Pokhrel, Prof. Bharat Jha, Mrs. Jyoti Acharya MSc. MLT (Microbiology), Mr. Jagat Khadka MSc. (Microbiology), Mr. Jaybind Singh (TUTH), Mr. Keshav Prasad Adhikari and Member Secretary Mr. Dhan Prasad Paudel Registrar, NHPC.

Two days seminar was held to disseminate these minimum requirements in presence of concerned experts, representative from Ministry of Health & Population (MoHP), representatives from different universities, Council for Technical Education & Vocational Training (CTEVT), Forum for Health & Technical Science (FHTS) Nepal & Federation of Private Technical School (FPTS) and was finalized.

I want to give special thank to World Health Organization, Nepal for providing financial support and the team involved in revising this minimum requirement including Niketh Raj Poudel and Deepa Poudel from the beginning to end.

This document will be effective from 2068 B. S. and help to produce quality health lab professionals. I would like to thank all senior Health Professionals and colleagues for their valuable suggestions and support.

Dr Hari Lamsal
Chairman

Preface to second edition

Nepal Health Professional Council (NHPC) has been striving to fulfill its responsibilities mandated by the nation through Nepal Health Professional Council Act 2053 and Nepal Health Professional Council Regulation 2056. Since its establishment, NHPC has been registering health professionals graduated in country and abroad, implement a code of ethics for different level of health professionals, and monitor to ensure that health professionals are practicing according to their professional ethics. In order to ensure minimum standard in different level of professional education, NHPC has also promulgated minimum requirements for different level and disciplines of health professional courses.

NHPC issued minimum requirements for Bachelor of Sciences in Medical Microbiology Program in 2061 and Medical Biochemistry Program in 2062. Also Minimum requirement for Bachelor in Health laboratory Technology (BMLT/Bc MLT) was issued in 2068 BS. This minimum requirement for Bachelor in Medical Laboratory Sciences is revision of all these 'minimum requirements. Since its promulgation, considerable changes in this discipline and also the education system have been observed. Our own national experiences in running medical laboratory courses and also a wide variation in the degree obtained by professionals in countries and different Universities abroad have demanded revision in the earlier requirement. With implementation of the revised minimum requirements, NHPC expects that the Bachelor level education in Medical Laboratory Sciences in country and abroad shall have uniformity in educational standard.

Some of the notable changes in this minimum requirement are in admission criteria for enrollment in course, number and eligibility of faculty, curricular requirements, and course duration. This revised edition has also specified requirements for students graduated from foreign universities.

Series of consultative meetings and workshop were held with public health professionals during the revision process. I would like to thank Mr Basant Adhikari, Registrar for initiation and coordination of the development process of this minimum requirement. I would like to acknowledge Mr Pushpa Raj Khanal and Mr Narayan Karki for their contribution in preparing draft, organizing workshops and conducting series of meetings with subject experts. I also thank Mr Rajan Paudel for incorporating feedbacks from different group and bringing the document in this shape. I would also like to acknowledge Subject committee members Dr Binod Yadav and Mr Hari Kattel; experts Prof Bharatmani Pokhrel, Prof Bishnu Raj Tiwari and members of Medical Laboratory Associations for their professional inputs.

I also extend my sincere thanks to NHPC board members Hari Kunwar, Mukesh Kumar Jha, Sashikant Chaudhary, Shantalal Shrestha, Dr Dilip Sharma for their contribution. Last but not the least; thanks go to Deepa Paudel, Menuka Prasai, Shital Basnet and other staff of NHPC for their effort.

Ram Prasad Bhandari
Chairman

Table of Contents

Preface	2
Table of Contents	3
Introduction	4
Student	4
Entry Requirement for Students	4
Admission Policies	4
Duration of Study	4
Attendance Requirements	4
Course Coverage	4
Student's Evaluation	5
Teaching Faculty	5
Number of Faculties	5
Teacher Student Ratio in Teaching Learning	5
Qualification of Teacher	6
Work Load	6
Institution	6
Organizational Structure of the Constitutional or Affiliated Academic Institution	6
Principal or Campus Chief or Chief of Central Department or Director	6
Head of the Department (HoD) and/or Coordinator	7
Administrative Staff	7
Teaching Facilities	7
Facilities for other activities	8
Facilities in Hospital Laboratory and Equipment	9
Required Teaching Learning Equipment, Materials	9
Registration for Foreign Degree	11

Introduction

Nepal Health Professional Council has approved this requirement according to clause of 9 (Kha) of the Nepal Health Professional Council Act 2053. This requirement shall be called Minimum requirement for the recognition of Bachelor in pathology (Medical Laboratory Technology) Programme (2060), first revision 2068 and second revision 2076.

An institution that plans to start or conduct Bachelor in Pathology (BMLT/B.ScMLT) Programme shall ensure the standard as specified in this minimum requirement in order to qualify for granting accreditation.

Student

Entry Requirement for Students

The entry requirement for a student in BMLT/BSc. MLT will be Intermediate in Science (I.Sc) or Higher Secondary Level (10+2 Science streams) in biology stream or Proficiency Certificate Level in Medical Lab Technology (CMLT) as recognized by concern University with at least 50% marks. Besides the basic academic requirement, an entrance examination will be held for all applicants and should secure 50% marks to be eligible for admission.

Admission Policies

- Intake of student should be annual
- The maximum number of intake is 20 students per section and the number of sections should not exceed two in a college
- The selection of the student should be in merit basis

Duration of Study

Duration for the completion of all the requirements for the BMLT/ BSc. MLT program as a full-time student is **4 Years** in annual system and 48 months (8 Semesters) in semester system.

Attendance Requirements

A student must attend every scheduled lecture, tutorial, seminar, field visit, lab work and practical classes. However, to accommodate for late registration, sickness and other contingencies, the attendance requirements will be a minimum of **80%** of the classes actually held.

Course Coverage

The programme must have following core subjects-Clinical biochemistry, Hematology and blood banking, Clinical microbiology, Histopathology and Cytology

Student's Evaluation

A student's academic performance in a course is evaluated in two phases as:

- Internally by the concerned faculty member through quizzes, tutorials, lab works, home assignments, class tests, class participation, term papers, internal exam etc.
- Externally by the Office of the Controller of Examinations of concern University through year/semester-end examinations.
- Laboratory work, project work, Practical and internship will be evaluated by external examiner through practical, demonstration, presentation and oral examination.

Teaching Faculty

Number of Faculties

- Number of faculties for bachelor program per section should be maintained as follows:
 - Professor/Associate Professor 1 Full time
 - Assistant Professor/Lecturer 2 Full time
 - Lecturer/Teaching Assistant 4 Full time

There should be at least 3 instructors (full time) for practical purpose.

The above-mentioned number is for the full-fledged program and should be **at least 7** full time faculties per section (excluding instructor). There should be at least one full time Professor/Assoc. Professor and two Assistant Professors at the beginning and the number should be increased before the new batch is enrolled.

Council will recognize the minimum qualification of a faculty as per the concerned university service commission eligibility.

- As per the curricular needs additional part time teachers or teachers in course contract should be managed by institution.
- Full time teachers should be from core subjects (Biochemistry, Microbiology, Hematology, Histo cytopathology).

Teacher Student Ratio in Teaching Learning

There should be sufficient teachers to teach as per curriculum in a ratio as follows:

- Overall ratio of student and teacher must be 1:10 excluding Principal.
- Teacher to students ratio for classroom teaching (1:40)
- One teacher is to 4 students ratio for bench work teaching in the hospital (1:4)
- One teacher is to 10 students ratio for practical demonstration (1:10)

Qualification of Teacher

- Minimum academic qualification should be at least Master degree in relevant subject
- Experience and other requirements for the academic positions shall be as per the requirement of concern University.
- Instructors must have B.Sc MLT /BMLT degree with NHPC registration for core subjects.
Note: Faculties working as a full timer at one institution can NOT be full timer in another institution.

Work Load

- For taking the theory and practical classes as well as field practices
 - Principal/Chief: **8 hours/week** (maximum)
 - Professor: **12 hours/week** (maximum)
 - Associate professor: **14 hours/week** (maximum)
 - Assistant Professor: **16 hours/week** (maximum)
- One theory class equivalent to three hours practical classes and six hours field practices
- One research supervisor can supervise only **5 students** maximum per academic year.

Institution

Organizational Structure of the Constitutional or Affiliated Academic Institution

- Concern constitutional or affiliated academic institution should establish the following committees/sections
 - Departments/Instructions committee
 - Examination section
 - Student welfare committee
 - Student counseling section
 - Research Management Committee (RMC)
- A separate organizational financial system should include:
 - Financial viability plan
 - Annual budget for program
 - Source of income
 - Audit system

Council recommends residential placement to the students for practical exposure. If the residential placement is not available, distance between Institutes and Hospital should be less than 20 kilometers (travel duration not exceeding 30 minutes). Council will follow the rule according to MOU with nominated hospital by respective institutes according to NHPC rules and regulations.

Principal or Campus Chief or Chief of Central Department or Director

- Sole Clinical Pathology College: S/He should have at least BMLT/BSc. MLT with M.Sc. MLT/MT and 7 years of academic/teaching learning experience. S/He should be registered in NHPC.
- Multidisciplinary Health Science College: S/He should have at least Master's Degree in any related subjects teaching in the college and 7 years of academic/teaching learning experience. S/He should be registered in concern council.

Head of the Department (HoD) and/or Coordinator

- S/He should have at least BMLT/BSc. MLT with M.Sc. MMLT/MLT and 5 years of teaching learning experience.
- S/He should be registered in NHPC.

Administrative Staff

Administrative staff should be sufficient in number to facilitate the educational/ administrative works. The required staffs are as follows:

- Administrative Officer: S/He should have passed minimum Bachelor's degree or equivalent in any subject.
- Finance Officer: S/He should have passed minimum Bachelor's degree in Commerce/ Business Studies/Administration or equivalent.
- Account/Administrative Assistants: Accountant and Administrative Assistants should have passed 10+2 or equivalent.
- Librarian: The Head of the Library should have University Degree and must have sufficient training in library science.
- Computer Technician: S/He should have passed minimum Diploma/ Bachelor in computer sciences and should be command both in English and Nepali languages writings and reporting.
- Laboratory Assistant: S/He should have passed University Degree in Laboratory Science or 10+2 (science) with training and or demonstrating laboratory work of Laboratory Assistant in concerning Faculty or Department of particular organization.
- Office Assistants (helper/peon/cleaner/driver) should be a Nepali citizen and should be literate in Nepali (Command in both Nepali and English languages is preferable).

Teaching Facilities

Building and physical facilities requirements are as follows:

- a. Building
Training building should have adequate area for teaching, practical as well as extra-curricular activities for required section.
- b. Hospital

- A well-equipped 100 bedded hospital for full phased programme having more than 50% bed occupancy with all facilities of separate well-equipped laboratories. MOU with hospital is required (hospital MOU with College). MOU should be made for the whole course duration and be renewed each year.

A 100 bedded hospital can provide permission for 40 students of the programme at a time.

c. Classroom

- Well ventilated/well lighted.
- 1 sq.m./student for practical classes and 0.75 sq.m./student for theory classes.
- A maximum of 20 students in one classroom for theory class with adequate furniture.

d. Principal office room

- Enough space for administrative purposes.

e. Office room

- Enough space for administrative and financial work.

f. Demonstration room:

- For 5 students at a time on the basis of 1:5 teacher student ratio for demonstration.
- There should be separate demonstration/practical room for Anatomy.
- There should be separate well-equipped Laboratories for each branch of Medical Laboratory Technology which includes Biochemistry, Hematology, Parasitology, Bacteriology, Virology, Mycology, Histopathology, Cytology, Immunology, Blood Bank and a common Tutorial Laboratory for Special procedures.

g. Library:

- Should have enough space for book keeping & student study.
- 50% of course books must be available. Reference books should be available at the ratio of 1:5 students.
- Professional journals of respective subjects must be available.
- Adequate number of reference books for each subject for teacher should be available.
- Other related books, magazines and newspapers should be available.
- Programme course curriculum must be available.
- Tables, chairs, open racks must be available in library and other offices as per need.

h. Computer/ Type room with necessary equipment for student learning.

i. Room for general store and Audio-visual aid equipment.

j. Toilet at 1:10 ratio (separate for male and female)

Facilities for other activities

- An outdoors athletic ground

- Indoor games
- Provision of vehicles for field activities
- Parking space- faculties, staffs and students
- Space for student welfare with counseling services
- Students' hostel (Male and Female separate) is preferable
- Canteen with safe drinking water, hygienic kitchen and dining hall

Facilities in Hospital Laboratory and Equipment

- The clinical Laboratory practice must cover Biochemistry, Parasitology, Bacteriology, Virology, Immunology, Mycology, Hematology & Blood banking and Histopathology / Cytology.
- Letter of agreement between Laboratory at government/private/community Hospital/Medical college must be obtained before starting/during the programme.
- The hospital should have provision of adequate samples which should be provided for the college/institution laboratory for practical purpose.
- Internship letter must be issued by hospital and signed by a Medical person with Name, Designation and council number.
 - Clinical posting must complete all required departments.
- Clinical posting must complete all required departments. A valid log book should be submitted at the time of registration signed by registered person.

Required Teaching Learning Equipment, Materials

a. Histopathology / Cytology Laboratory

- Automatic tissue processor 1
 - Knife sharpeners 1
 - Microtomes 3 (Rotary/ base sledge / Rocking)
 - Oven 1
 - Water bath 1
 - Microscope 5
 - Cytocentrifuge 1
- Other glassware and consumables as per the need.

b. Hematology & Blood banking Laboratory

- Microscope (binocular) 10
- Colorimeter 1
- Centrifuge 1
- Haematocrit centrifuge 1
- Water bath 1
- Coagulometer 1
- Micropipettes 2 (Variable volume)
- Sahli's Hemoglobinometer 2
- Counting Chamber 4

- Differential Counter 2
- Hematological coulter counter 1
- Electrophoresis set 1
- Refrigerator 1
- Distillation unit 1
- Blood bank refrigerator 1

Other glassware and consumables as per the need.

c. Biochemistry Laboratory

- Colorimeter/spectrophotometer 2
- Centrifuge 1
- Water bath 1
- Pipette washer 1
- Micropipette 5 (Variable volume)
- Biochemistry Analyzer 1
- Electrophoresis set 1
- Flame photometer/ISE analyzer 1
- Vortex mixture 1
- pH meter 1
- Refrigerator 1

Other glassware and consumables as per the need.

d. Microbiology (Bacteriology & Serology)

- Microscope (binocular) 10
- Incubator 1
- RPR Rotor 1
- Centrifuge machine 1
- Water bath 1
- Micropipette 3 (Variable volume)
- Carbon dioxide incubator 1
- Clean bench 1
- Autoclave 2
- Distillation unit 1
- Hot air oven 1
- Anaerobic culture set 1
- ELISA Reader 1
- ELISA Washer 1
- Multichannel micropipettes 2 (Variable volume)
- Inspissator 1
- Vortex mixer 1
- Refrigerator/cold room 1
- Deep freezer 1
- pH meter 1

Other glassware and consumables as per the need.

e. Parasitology

- Microscope (binocular) 4
- Centrifuge 1
- Incubator 1
- Refrigerator 1
- Micropipette 2 (Variable volume)

Other glassware and consumables as per the need.

f. Emergency

- Microscope (binocular) 1
- Refrigerator 1
- Colorimeter/ spectrophotometer 1
- Incubator 1
- Centrifuge 1
- Haematocrit centrifuge 1
- Flame photometer/ISE electrolyte analyzer 1

Other glassware and consumables as per the need.

Registration for Foreign Degree

- Must have Bachelor Degree in Pathology (BMLT/B.ScMLT).
- Duration must be at least **four years** or **240 ECTS** equivalent
- Should submit a valid supporting document to prove a regular student (College letter of regular student, passport, visa, immigration documents).
- **Must submit permission letter issued by NHPC.**
- Should have equivalence from concern authority of Nepal.
- Should have passed the entrance of a University of Nepal.
- Minimum six months internship (laboratory postings) in a recognized minimum 100 bedded hospital or national or provincial public health laboratory of Nepal(NPHL).
- Internship letter must be issued by hospital and signed by a Medical person with Name and Designation.
- A valid log book signed by laboratory in-charge (BMLT/B.Sc MLT or above level) should be submitted at the time of registration.