

MINIMUM REQUIREMENTS
FOR
THE RECOGNITION
OF
DIPLOMA IN PHARMACY PROGRAMME



NEPAL PHARMACY COUNCIL
BIJULIBAZAR, KATHMANDU
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Minimum requirements for the recognition of Diploma in Pharmacy

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CHAPTER 1

Preliminary

1. Short title and commencement

1.1 The Nepal Pharmacy Council has approved this requirement in pursuance of Section 9, 21, 22, 23, 24 and 29 of the Nepal Pharmacy Council Act, 2057 and in exercise of the power conferred by Rule 7.9 of the Nepal Pharmacy Council Rules, 2059.

1.2 This requirement may be called "Minimum requirement of the recognition of the Diploma in Pharmacy, 2002".

1.3 It shall come into force at once.

1.4 An institute will have to ensure its organisation, administrative mechanism, facilities, curriculum and teaching process to confirm to the following requirements in order to qualify for granting accreditation from the Nepal Pharmacy Council.

CHAPTER 2

Organisation and administration

2. Programme

The education programme must have

- Educational philosophy
- Aim and objective of the programme
- A separate governing body, consisting of
 - Trust or Board
 - Training management committee
 - A separate administrative section consisting of personnel Administration Section and Account section.
- A clear organisation structure with the following committees:
 - Curriculum committee
 - Examination committee
 - Library committee
 - Co-ordination committee
 - Student welfare committee
 - Advisory committee with Representative from Nepal Pharmacy Council.

3. Pharmacy Programme Co-ordinator

The Pharmacy Programme Co-ordinator should be a graduate pharmacist registered in Nepal Pharmacy Council (B. Pharm with 10 years experience or M. Pharm with 3 years experience). The role and responsibility of the Pharmacy Programme Co-ordinator should be defined and documented. The Pharmacy Programme Co-ordinator should ensure the quality and standard of the Programme.

3.1 Responsibility of Pharmacy Programme Co-ordinator

- Organization and administration of the training center/school.
- Defining & interpreting the objective and policy of the school.

- Participating and selecting training and administrative staffs.
- Planning, organizing and directing of the programme.
- Participating in preparation of the annual plan and budget of the institute.
- Making provision of job description for each staff.
- Facilitation and co-ordination of different related activities to training and administrative policies.
- Liaison with other section of organisation.
- Liaison with Nepal Pharmacy Council, Council for Technical Education and Vocational Training (CTEVT), Department of Drug Administration (DDA) and other institutions.
- Planning for staff development.

4. Student - teaching ratio

Academic staff should be sufficient to teach the curriculum. The teacher-student ratio should be as follows.

- Overall ratio of pharmacy teacher must be 1:10.
- One teacher to maximum of 40 students for classroom teaching (theory).
- One teacher to maximum of 20 students for practical and field exercise.
- 50% of the teachers must be full-time.

5. Teaching load

- a. Pharmacy Programme co-ordinator shall also involve in teaching as well.
- b. Other full-time teachers will have a teaching load of approximately 18 hours per week including practical.

6. Student enrolment

The programme must have guidelines for admission policies.

- c. Intake of students should be annual.
- d. The maximum number of student's intake is forty per academic year for a new institution.
- e. Academic qualification is School Leaving Certificate (SLC) pass.
- f. The specific subjects required are

- English
- Mathematics
- Sciences
- g. The applicants must submit the following documents with the application.
 - SLC passed certificate
 - Character certificate
 - Citizenship certificate
 - Physical fitness (certificate can be submitted at the time of admission)
- h. Selection of the student
 - The selection of the student is based on the marks obtained in the entrance examination however, Entrance test carries 80% and 20% shall be taken from the SLC score.
 - Quotas will be provided for students from remote areas, women, dalit etc. Equity and equal access will be emphasised.

CHAPTER 3

Teaching facilities and equipment

7. Educational building and physical facilities

7.1 The training building shall be located within at least 3 ropanies of land. The programme shall have the following space/physical facilities for general and teaching purpose.

S.N.	Space for general purpose	No. of Rooms	Remarks
1	Teacher Room:	1	With cubicals
2	Administration and Supportive Staff i) Pharmacy Programme Co-ordinator ii) Administration / Account iii) Computer iv) Main Store v) Lab Assistant / Maintenance Assistant	1 1 1 1 1	
3	Lecture Rooms i) First year ii) Second Year iii) Third Year	1 1 1	40m ² (1m ² per student is the lower limit)
4	Library	1	Sufficient space for reading and books.
5	Laboratories i) Physics ii) Chemistry / Pharmaceutical Chemistry iii) Zoology/Human Physiology / Pharmacology	1 1 1 1	

	iv) Botany/Pharmacognosy	1	
	v) Pharmaceutics	1	
	vi) Micro-biology/Biochemistry	1	
6	Canteen	1	
7	Bicycle & motorbike stand	1	
8	Toilets	Sufficient numbers	Separate for ladies and gents

7.2 The programme shall have the following general facilities for teaching and office purposes.

S.N.	Facilities	Quantity (in No.)	Remarks
1	Telephone line	2	1 for general purpose & 1 for e-mail, internet & fax
2	Fax	1	
3	Computer	10	Computer lab in the same premises with internet
5	Photocopy machine	1	
6	Overhead projector	3	
7	LCD Projector	1	
8	e-mail and internet	1	
9	Furniture		As per the need of rooms
10	Water filter/Euro guard or equivalent for drinking water		

7.3 The programme shall have the facilities for sports and recreation.

The field trip and extra curricular activities should be reflected in the academic calendar.

7.4 The programme shall keep appropriate newspaper, magazines, journals and reference resource materials in the library.

8. Teaching staff

8.1 The programme must have the following teaching staff

- For Basic Science (as per the syllabus)

Physics - 1

Chemistry - 1

Zoology - 1

Botany - 1

Mathematics - 1

English - 1

Nepali Studies - 1

Nepali - 1

Computer - 1

- **For Health Science**

Type of teaching staff	No.	Qualification
i) Pharmacy	3	B. Pharm
ii) Pharmaceutical Chemistry		
iii) Pharmacology		
iv) Pharmacognosy	1	B. Pharm/MSc Botany
v) Microbiology/ Biochemistry	1	M. Pharm/MSc Microbiology
vi) Physiology	1	B. Pharm/MBBS

9. Library facilities

- **For Basic Science**

The number of students in the first year class begin 40, the library should have at least 20 pieces of textbooks each & sufficient number of reference books for each subjects. Reference books for each paper.

▪ **Pharmaceutical Sciences**

S.N.	Subject	Quantity
1	Pharmaceutical chemistry inorganic	10
2	Pharmaceutical chemistry organic	10
3	Pharmaceutical analysis	10
4	Pharmacy	10
5	Biochemistry	10
6	Micro-biology	10
7	Pathology	10
8	Pharmacology	10
9	Forensic Pharmacy	10
10	Health Education	10
11	First Aid	10
12	Hygiene & sanitation and Nutrition	10
13	PHC / Pharmaceutical Management	10
14	Pharmacognosy	10
15	Other / reference	As required

10. Laboratory facilities/ field practice

10.1 The laboratory facilities/ practical work facilities required are as follows.

10.1.1 Physics Lab:

- Working tables
- Vernier calipers
- Hollow & solid cylinders
- Screw gauge & steel balls
- Glass rods
- Plain mirrors
- Thermometers

- Concave & Convex lenses
- Bar magnets
- Magnetic needles
- Meter bridges
- Rheostats
- Nicholson's hydrometers
- Hypsometers
- Voltmeters
- Hydrostatic balances
- Ammeters
- Resistance boxes
- Optical benches
- Drawing boards
- Slotted weights
- Specific gravity bottles

10.1.2 Chemistry

- Bunsen burners, Spirit lamps, Tripod stands, Gas valves, Stand & clamps, Filtration stands, Chemical weight boxes, glass tube & glass rods, round bottomed flasks of different volumes, eudiometric tubes, water trough plastics, fire extinguishers, Distillation sets, Keep's apparatuses, and the required chemicals in adequate amounts:

10.1.3 Zoology/Human Physiology Lab:

Water taps installed for students during dissections & other laboratory works.

Light microscopes

Glycerine

Soframin

Slides & cover slips in sufficient numbers

Museum specimens of at least one each from the following groups:

- a) Protozoa - rhizopoda, *E. histolytica*, Mastigophore, Euglena, Giardia, Leishmania, Ciliate, Paramecium
- b) Porifera - Sycon
- c) Coelenterate - Hydra
- d) Platyhelminthes - Cestodes - *T. saginata*, *T. solium* and *E. granulosus*
- e) Nematelminthes - *A. lumbricoides*, *T. trichiura*, *E. vermicularis*, *A. duodenale*, *W. bancrofti*
- f) Annelida - Earthworm, leech
- g) Arthropoda - crustaceans - prawn, crab
 - Arachnida - scorpion, spider
 - Insecta - Anopheles & culex
 - Including life - cycle of *Pediculus*, *Cimex*
- h) Mollusca - *Unio* and *Pila*
- i) Echinodermata - Starfish
- j) Chordata:
 - Pisces - *Scoliodon*, *Labeo rohita*
 - Amphibia - Frog, Toad, *Hyla*
 - Reptilia - Wall Lizard, *Natrix*, *Naja*, *Bungarus*, Viper, Tortoise
 - Aves - Crow and Pigeon
 - Mammalia - Bat, Anteater
 - Dissecting tray, Dissecting box, specimen bottle

10.1.4 Botany/Pharmacognosy Lab:

- Slides & coverslips
- Permanent slides of different stages of mitosis & meiosis cell divisions
- Gram staining Kits
- Soframin
- Glycerine
- Permanent slides of *spirogyra* & *nostoc*
- Collection of plants of medicinal value eq. medicinal algae
- Permanent slides & museum specimens of *mucor*, yeast, *penicillium*, *onocarpus* and *cleveleya*

- Museum specimens of edible and poisonous mushrooms
- Bel jars
- Cobalt chloride
- Museum specimen of common spices
- Museum specimen of crude drugs (representing fruit, bark, leaf, stem, flower, root, resin etc.)

10.1.5 Pharmaceutics Lab:

- Mortar and pestles
- Single punch table compression machine
- Hardness Testers
- Different sized sieves (12, 16, 20, 30, 40, 60, 80 and 100)
- Spatula different sizes
- Measuring cylinders - 200, 500 and 1000 ml.
- Electric heaters
- Hot-air oven
- Autoclave
- Steel trays -
- Beakers 50, 100, 250, 500, 1000 and 2000
- Capsule filling machine

10.1.6 Microbiology/ Biochemistry Lab:

- Refrigerator
- Incubator
- Oven
- Air Conditioners
- Petri dishes
- Microscopes (binocular)
- Microscopes (monocular)
- Autoclave
- Electric centrifuge machine

- Water baths
- Test tubes - sufficient quantity
- Inoculation devices with loop
- Bacterial cultures (sterile)
- Capillary pipettes
- Bunsen burners
- Antiseptic solution - sufficient quantities
- Protective clothing for 10 students
- Gloves - sufficient quantities
- Masks - sufficient quantities
- Non-absorbent cotton/cotton wool sufficient quantity
- Following materials in sufficient quantities for media preparation:
 - a. Media (peptone)
 - b. Yeast extract
 - c. Beef extract/ meat extract
 - d. Sodium chloride
 - e. Tryptone
 - f. Soya (peptone)
 - g. Dextrose
 - h. Potassium dihydrogen phosphate
 - i. Agar (nutrient)
 - j. Membrane filters
 - k. Gentian violet
 - l. Iodine
 - m. Glycerine

10.2 The professional practice (field practice/practical) shall be carried out in hospital, pharmacy and industry settings. The following shall be the requirements for the field practice.

- At least 25 bedded hospital having drug-dispensing system- 1. Hospital should have dispensing facilities and department of medicine, general/surgery, eye, dental, gyn/obs, pediatric, ENT, emergency and pathology/medical laboratory.

- Retail pharmacy -20. For the training facility, based on the student intake, the student - retail pharmacy ratio should be 2:1.
- Pharmaceutical production Unit - 2. It should be registered in DDA and should be operational in manufacturing.
- Pharmaceutical laboratory facility - 1. The laboratory should be recognised by DDA. Quality control laboratory of pharmaceutical industry is also acceptable.

11. Equipment, instruments, chemicals and teaching aid

10.1 The equipment required for general pharmaceutical techniques & clinical practices are as follows.

S.N.	Name of Equipment	Remarks
1	Stethoscopes	
2	Blood pressure measuring equipments	
3	Thermometers (oral)	
4	Tongue depressors	
5	Syringe & Needles (disposable)	
6	Cotton	
7	IV Sets	
8	IV Canulas	
9	Gloves	
10	Scalpel blades	
11	Knife holder	
12	Torches	
13	Weighing machine for adult	
14	Tissue forceps	
15	Gauzes	
16	Crepe bandages	
17	Antiseptic Solution (eg. Savlon/Betadine)	
18	Plain Scissors	
19	Saline stands	

20	Hot water bags	
21	Dissecting scissors	
22	Gas cylinders	
23	Hot plates	
24	Sprit lamps	
25	Bunsen Burners	
26	Sieves No. 40	
27	Other relevant instruments / equipments	

10.2 The programme must have the following specific laboratory equipment for practical experiments.

S.N.	Equipment	Remarks
1	Water baths	
2	Refrigerators	
3	Colorimeters	
4	Micropipettes	
5	Differential Counters	
6	Electric Centrifuges	
7	Hand Centrifuges	
8	Disintegration testing machine	
9	Hardness tester	
10	Physical Balances	
11	Chemical balances	
12	Dispensing balances	
13	Water Distillation Plant	

10.3 There shall be a provision of the following chemicals/consumables for the laboratory/practical work for II and III years.

S.N.	Name of chemical/consumable	Remarks
------	-----------------------------	---------

1	Syringes 5ml	
2	Cotton Rolls	
3	Glass tubes large size	
4	Glass tubes small size	
5	Fitter papers	
6	Glass pipettes 10ml	
7	Glass pipettes 5ml	
8	Glass pipettes 1ml	
9	Cover slips	
10	Glass centrifuge tubes	
11	Microscopic glass slides	
12	Electric Heater	
13	Staining Racks	
14	Standing Racks	
15	HCL	
16	H ₂ SO ₄	
17	NaCL (LR and AR)	
18	Rectified spirit	
19	Crystal Violet Solution	
20	Lugols Iodine Solution	
21	Acetone	
22	Carbol fuchsin solution	
23	Ethylene blue solution	
24	Wright stain solution	
25	Giemsa stain	
26	Distilled water	
27	WBC diluting fluid	
28	Plastic droppers	
29	pH papers	
30	Plastic washing bottles	

31	Methanol	
32	Measuring cylinder 1000 ml	
33	Measuring cylinder 100 ml	
34	Measuring cylinder 10 ml	
35	Microscopic oil	
36	Glycerine	
37	Beaker 500 ml	
38	Beaker 200 ml	
39	Beaker 100 ml	
40	Urea Reagent kits	
41	EDTA	
42	Copper Sulphate AR	
43	Potassium Iodide AR	
44	Potassium Iodide	
45	Starch powder	
46	Sodium Thiosulphate	
47	Methyl Orange reagent	
48	Phenolphthalein reagent	
49	Methyl red	
50	Sodium Hydroxide	
51	Sodium bicarbonate	
52	LPG	
53	Chemicals for the formulation of <ul style="list-style-type: none"> ▪ Suspension ▪ Emulsions ▪ Dusting Powder ▪ Whitefield ointment ▪ Antiseptic solution ▪ Elixir 	

10.4 The following teaching materials required for health education, hygiene & sanitation, and nutrition shall be available in teaching/demonstration room.

- Relevant pamphlets
- Relevant posters
- Relevant flash cards
- Relevant flip charts
- Flannel boards
- Bleaching powder
- Puppets
- Specimen of samples of nutritional food available in Nepal.

CHAPTER 4

Curriculum Guideline and Instruction Management

12. Philosophy, objective and course management

12.1 The curriculum must be based on philosophy, objective and conceptual framework as prescribed by the Nepal Pharmacy Council.

12.1.1 Philosophy:

The philosophy of the Diploma in Pharmacy curriculum should be based on the development of pharmacy as a profession for fulfilling the health need of the people with its socio-cultural impact on health. It should be based on code of conduct of Nepal Pharmacy Council. The approach should focus on preventative, curative, promotive and rehabilitative aspect of drug use in health care.

12.1.2 Objective:

- a. To prepare professional diploma level pharmacy assistant demonstrating positive attitude and respect for the profession and socio-cultural values.
- b. To prepare professional diploma level pharmacy assistant for providing quality dispensing and health service to people in the hospital as well as in the community settings.
- c. To prepare supportive technical human resource, with quality concept, for pharmaceutical manufacturing, quality control and drug control.
- d. To prepare leadership quality in professional pharmacy assistant to manage rational supply of pharmaceuticals and to promote rational use of drugs within the health care service or at the private pharmacies.

12.1.3 Conceptual framework:

The course should reflect:

- the need of pharmaceutical service in proper care of a patient
- the need of proper pharmaceutical care for improving the pharmacotherapy
- the respect gained from the community through professional service
- the role and responsibilities of pharmacist to improve the pharmaceutical supply system and to promote rational drug use
- the development of professionalism in pharmaceutical sector by addressing the public health and community need.

12.2 The following processes shall be adopted for the teaching learning management.

12.2.1 Duration of Course: 3 years after School Leaving Certificate Examination (S.L.C).

12.2.2 Vacation: The student will have 8 weeks of summer / winter vacation & 4 weeks of Dashain / Tihar vacation.

12.2.3 Teaching learning management criteria

The programme must provide the following criteria:

- Provide learning environment
- Provide practical programme in community and health facility.
- Provide educational calendar showing different schedule of theoretical, practical (clinical & community), vacation and examination.
- Provide clinical and community field plan for students.
- The medium of teaching should be in the English (except for the Nepali language subject)

12.2.4 Course headings *

S.N.	1 st Year	2 nd Year	3 rd Year
1	English	Pharmaceutics I	Pharmaceutics II
2	Nepali	Pharmacology and Therapeutics I	Pharmacology and Therapeutics II
3	Social Studies	Pharmaceutical Chemistry I	Pharmaceutical Chemistry II
4	Anatomy and Physiology	Pharmacognosy	Hospital & Clinical Pharmacy
5	Physics	Biochemistry, Microbiology and Pathology	Forensic and Community Pharmacy

6	Chemistry	Pharmaceutical Management	Pharmacoepidemiology and Environment Health
7	Zoology	Health Education, Health Care System and First Aid	Comprehensive Professional Field Practice
8	Botany		
9	Mathematics, Statistics & Computer Application		

* As per Curriculum for Diploma in Pharmacy Programme by CTEVT 2005.

12.2.5. Course Time Division

- a. The academic year consist of three years

12.2.6 Professional practice

- a. The professional practice (field practice) should be conducted in hospital, retail pharmacy and manufacturing unit recognised by Ministry of Health& Population / DDA.
- b. During field practice there should be at least one teacher (either from health facility or training institution). The teacher from the training institution shall monitor the field practice.
- c. Field practice certification from the field training institution is essential for every student.
- d. Field practice report should be submitted to the institute.

12.2.7 Evaluation Process

a. Internal assessment

There shall be a transparent evaluation system for each subject both in theory and practical.

- i) Each subject should have internal evaluation at regular intervals of four months and students must get the feedback about it.
- ii) Clinical assessment format must be used by the teachers for evaluating student's performance in each subject of clinical experience.

b. Final examination

- i) Students must pass in all subject to qualify for the certificate. If student fails in any subject there will be provision for re-examination according to CTEVT policy.
- ii) Students should be allowed to give final examination only after passing the internal assessment both in theory and practical.
- iii) A student without professional field practice and report submission shall not be eligible to get the Diploma Certificate.

c. Requirement for final practice examination:

- i) There must be a provision for conducting practical examination by qualified pharmacist.
- ii) One examiner in one setting should examine not more than twenty students per day for their practical skill.
- iii) Practical examination should be conducted in actual situation on relevant subject.
- iv) There should be an external examiner (a qualified pharmacist involved in teaching-learning of pharmacy).