

PHARMACY COUNCIL



STANDARDS FOR PHARMACY TRAINING INSTITUTION (NTA LEVEL 4 - 6)

NOVEMBER, 2017

FREQUENTLY ASKED QUESTIONS

EDUCATION, TRAINING AND PROFESSIONAL DEVELOPMENT

1. What are the procedures to establish Pharmacy Training Institution (PTI)?

Answer: If a person wishes to establish PTI, shall be required to do the following:

- i. Visit the Council website www.pc.go.tz to access the standards for establishment of Pharmacy Training Institutions;
- ii. Once, you have satisfied yourself that all the standards have been met, you shall be required to apply for approval to provide pharmacy training through **Form PCF 10** available at www.pc.go.tz and pay the prescribed fee of **TZS. 1,500,000/=** through the Council bank accounts;
- iii. The Council shall come for physical verification to establish whether the minimum standards to provide pharmacy training have been fulfilled;
- iv. The Council during its meeting shall determine the approval of the institution based on the inspection report; and
- v. The institution shall be provided with the decision of the Council.

NB: After Council approval, the institution shall be required to go to NACTE for registration or recognition of the department.

2. How do I know if the Pharmacy Training Institution I plan to attend is recognized?

Answer: If you intend to study pharmacy course within or outside Tanzania, you are advised to visit Tanzania Commission for University (TCU) (for degree or masters) or National Council for Technical Education (NACTE) (for certificate or diploma) to see whether the institution is recognized. However, you must visit the Council to obtain the set standards for the course you intend to pursue so that you will not get problems of registrations after you complete the course. You may also visit www.pc.go.tz for more information.

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ABBREVIATION

BP	-	British Pharmacopoeia
CAS	-	Central Admission System
CEDHA	-	Centre for Educational Development in Health, Arusha
CMC	-	Carboxymethyl cellulose sodium
LCD	-	Liquid Crystal Display
MHCDGEC	-	Ministry of Health, Community Development, Gender, Elderly and Children
MOHSW	-	Ministry of Health and Social Welfare
MOU	-	Memorandum of Understanding
MSH	-	Management Sciences for Health
NACTE	-	National Council for Technical Education
NTA	-	National Technical Awards
WHO	-	World Health Organization

INTRODUCTION

This document sets out the standards for establishing a training institution to offer Basic Technician Certificate (NTA L4), technical certificate (NTA L5) and ordinary diploma (NTA L6) in Pharmaceutical services.

It is important that the institution fulfills these standards and obtain approval of the Council before processing registration by National Council for Technical Education (NACTE).

STANDARD 1: INSTITUTIONAL VISION AND MISSION

The Institution must have a published statement of its mission, vision and its goals in the areas of education, research and other scholarly activities, services and pharmacy practice and its values.

This will be demonstrated by:

- 1.1 Availability of Institutional Vision, Mission, Values and Goals
 - 1.1.1 The institutional vision, missions and goals must provide basis for strategic planning on how the vision and goals will be achieved.
 - 1.1.2 Presence of Institutional missions which is aligned with the pharmacy profession's vision for practice, research and education
 - 1.1.3 The Institutional values should be stated commitment to;
 - 1.1.3.1 quality assurance and continuous quality improvement through assessment and evaluation
 - 1.1.3.2 encourage innovation in pharmacy practice and the vision for its future
 - 1.1.3.3 promotes use of teaching methods shown to enhance student learning
 - 1.1.3.4 support continuing professional development of its staff and students
- 1.2 Availability of Institutional Strategic Plan
 - 1.2.1 The Institutional strategic plan must be developed in line with its vision and mission
 - 1.2.2 The Institutional strategic plan should be continuous and revised as needed to meet programmatic and educational needs
 - 1.2.3 The Institution with no capacity in developing strategic plan should consider the use of external facilitators.



STANDARD 2: GOVERNANCE AND ADMINISTRATION

The Institution must have a Governing Board/ Advisory Board/Council/Board of Directors/Board of Trustees or other relevant legal bodies responsible for its quality and integrity.

This will be demonstrated by:

2.1 Availability of Institutional Governance

- 2.1.1 Presence of a functional and independent Governing Board/Advisory Board/Council/Board of Directors.
- 2.1.2 Presence of representation of academic staff, students and other key stakeholders of the Institution in the Governing board/Advisory board/Council/Board of directors
- 2.1.3 Tenure of Board/Council members and terms of reference must be specified.
- 2.1.4 Governing board/Advisory board/Council/Board of directors must be in compliance with the vision and mission of the Institution.

2.2 Availability of effective administration

- 2.2.1 Existence of qualified administration staff including Head/principal of the Institution
- 2.2.2 The Principal/Head of the Institution/department running pharmaceutical sciences program should have at least a Bachelor Degree in pharmaceutical Sciences.
- 2.2.3 The Head/Principal of the Institution/department must have at least 3 years of teaching experience or working at managerial position

2.3 Availability of a structure indicating roles and responsibilities of staff to ensure proper and smooth functioning of the Institution

- 2.3.1 Presence of a clear line of responsibilities and decision making
- 2.3.2 Presence of an institutional organogram

STANDARD 3: LEGAL STATUS

Before starting to enroll students, the Institution must have registration and other legal requirements.

This will be demonstrated by:

3.1 Availability of Registration/Accreditation/Approval

- 3.1.1 Presence of valid registration/accreditation certificates from the

National Council for Technical Education (NACTE)

- 3.1.2 Presence of valid certificate of approval to conduct training in Pharmaceutical Sciences from the Pharmacy Council of Tanzania.
- 3.1.3 Presence of additional legal documents such as certificates of incorporation, partnership deeds and other legal agreements
- 3.1.4 Application for registration/accreditation/approval must be accompanied by tutors' certificates of registration/license to practice.
- 3.1.5 Tutors whose certificates of registration/license to practice have been used in registration/approval of one institution must not be used in registration/approval of another training institution

3.2 Availability of Re-approval Certificate

- 3.2.1 Presence of a valid certificate of approval from the Pharmacy Council (Approval is valid for 3 years and subject for renewal)
- 3.2.2 Availability of internally generated academic report which shall be submitted at the end of semester I to the Pharmacy Council
- 3.2.3 Availability of external academic report which shall be submitted at the end of semester II to Pharmacy Council
- 3.2.4 Availability of internally generated self assessment report which shall be submitted annually before 31st December to the Pharmacy Council

STANDARD 4: HUMAN RESOURCE

The Institution must have a sufficient number of qualified full-time and part-time academic and support staff for effective delivery and evaluation of its programmes. The pharmacy training institution must have fair and equitable policies, procedures and capabilities to attract, develop, and retain an adequate and appropriate number of qualified tutors for effective delivery of the curriculum.

This will be demonstrated by;

4.1 Availability of staff recruitment policy in the institution

- 4.2 Presence of Principal/Head of institution/department as stipulated under 2.2.2 and 2.2.3 above.
- 4.3 Presence of full-time and part-time employment contracts for qualified academic and support staff
- 4.4 Ratio of tutors to students must be as stipulated in the NACTE Academic Quality Standards.
- 4.5 There shall be a minimum of four full time teaching/academic staff whom two shall be holders of at least bachelor degree in pharmaceutical sciences and two diploma holders in pharmaceutical



sciences.

- 4.6 Tutors of pharmacy training institutions must have qualifications suitable for the teaching career in pharmacy and have at least one academic qualification level higher than the graduands of the academic programme he/she will be teaching.
- 4.7 Tutors who are required to be registered by their professional bodies must satisfy all professional licensure requirements that apply to their professional practice.
- 4.8 Furthermore, tutors of pharmacy training institutions should have such additional qualifications as:
 - 4.8.1 Training in teaching methodology and assessment of students
 - 4.8.2 Good standing authentication from his/her professional registration authority
 - 4.8.3 Good command of language of instruction

STANDARD 5: TEACHING AND LEARNING ENVIRONMENT

The pharmacy training institution must have sufficient land and conducive environment to cater for required physical structures, social service amenities and future expansion.

This will be demonstrated by:

- 5.1 **Availability of relevant documents including title deed(s) or rent contracts not less than 3 years.**
- 5.2 Absence of distractive activities around the institution (Noise, Traffic, emissions, commercial activities, social activities and any form of interference)
- 5.3 Existence of proper storm water drainage system, water trenches/tunnels
- 5.4 Existence of proper waste management system to keep the environment clean and safe such as, waste bins and waste collection and removal centre.
- 5.5 Availability of own play grounds for sports and recreational services and/or acquired through hire purchase or other similar contractual agreements
- 5.6 Availability of multipurpose hall for conferences, conduct of examinations and other gatherings.

STANDARD 6: TEACHING AND LEARNING FACILITIES

The pharmacy training institution must have sufficient physical facilities for the staff and the student population to ensure that the curriculum can be implemented adequately.

This will be demonstrated by:

6.1 Availability of laboratories

- 6.1.1 There must be at least one functional medicines compounding laboratory with sufficient chemical ingredients, apparatus, instruments and equipment for practical training.
- 6.1.2 There shall also be a functional laboratory for production of sterile products.
- 6.1.3 The medicines compounding laboratory must be constructed and equipped according to the specifications provided (Appendix I and II) capable of accommodating a minimum of 25 students per session.
 - 6.1.3.1 The laboratories must have safety measures such as sand buckets, blankets, horse reels, fire extinguishers and emergency exits.
 - 6.1.3.2 The medicines compounding laboratory must have fume cupboards, chemical neutralization chambers/Containers, chemical resistant sinks and pipes, chemical-resistant table tops and electrical power outlets.
- 6.1.4 The laboratories must be located within each institution campus. The medicines compounding laboratory must have running water and water purification systems.
- 6.1.5 There must be at least one functional computer laboratory with adequate number of functional computers congruent with current programs of 1:3 ratio computers to students.

6.2 Availability of classrooms

- 6.2.1 There must be at least 3 classrooms with adequate number of chairs and tables or alternative options depending on the number of enrolled students per class.
 - 6.2.1.1 The classrooms shall have adequate space to accommodate a maximum of 50 students (size 10x8m, height of 3m), well ventilated and lit.
 - 6.2.1.2 The classrooms must be equipped with teaching aids, including flip chart, LCD multimedia and teaching boards.
 - 6.2.1.3 There shall be safety equipment and measures in the classrooms



including fire extinguishers.

6.3 Availability of library

6.3.1.1 The library shall be spacious to accommodate a minimum of 45 students at a time with a minimum size of 10x15m.

6.3.1.2 The library shall have enough furnitures such as chairs and tables with adequate light and ventilation.

6.3.1.3 The library must have relevant books for every subject as per Essential Books List (Appendix III)

6.3.1.4 In existence of e-library there should be adequate computers with reliable internet connectivity accessible to staff and students. Further to it, there shall be evidence of institutional subscription and authorization to electronic pharmaceutical literature.

6.3.1.5 There must be a provision for safety measures such as sand buckets, blankets, horse reel, fire extinguishers and emergency exits.

6.3.2 Availability of facilities for pharmacy practice sessions/rotations

6.3.3 The institution shall have memorandum of understanding (MOU) for pharmacy practice.

6.3.4 The facilities for pharmacy practice shall have relevant human resource and infrastructure as reflected below:

6.3.4.1 Presence of at least one pharmacist (for diploma) or one pharmaceutical technician (for certificate)

6.3.4.2 Availability of units such as compounding, production of sterile products, dispensing, storage and drug information units/sections

6.3.4.3 Availability of necessary working space and tools

6.4 Availability of Offices

6.4.1 There must be one office for the Principal/Head of training institution that is not shared.

6.4.2 There must be office(s) for other members of academic staff (tutors).

6.4.3 The office shall be equipped with computers and other working tools.

6.5 Availability of utilities and other services

6.5.1 Reliable electrical power supply

6.5.2 Adequate safe water supply and proper drainage system

6.5.3 Communication facilities such as telephones, internet, fax.

6.5.4 Accessible all-weather roads and adequate parking space.

6.6 Availability of support services

6.6.1 There shall be a number of toilets and urinals proportional to the number of users for both male and female as recommended by the



- appropriate authority
- 6.6.2 Toilets must have continuous supply of water, adequate light and ventilation
 - 6.6.3 Availability of first aid kits, infirmary and medicines
 - 6.6.4 Availability of qualified personnel to provide first aid services
 - 6.6.5 Availability of cafeteria/canteen
 - 6.6.6 A coordinated student accommodation system
 - 6.6.7 Coordinated student health care services such as health insurance scheme and referral system.

STANDARD 7: TRAINING PROGRAMMES

The pharmacy training institution must follow curriculum and instructional materials (training manual) as approved by NACTE.

This will be demonstrated by:

7.1 Availability of curriculum and instructional materials

- 7.1.1 The pharmacy training institution must adopt and use the National curricula for pharmaceutical sciences
- 7.1.2 The institution must adopt and use the instructional materials (training manuals) developed from the National Curricula for pharmaceutical sciences.

7.2 Availability of programme management system

- 7.2.1 The pharmacy training institution must have a functional academic committee, the composition of which is prescribed by NACTE
- 7.2.2 The functionality of the academic committee will be demonstrated and evidenced by the presence of written minutes for meetings held.
- 7.2.3 The academic committee must be responsible and have the authority for planning and implementing the curriculum for realization of its objectives.

7.3 Availability of assessment methods

- 7.3.1 The pharmacy training institution must abide by the methods of students assessment as provided in the curriculum
- 7.3.2 Availability of written academic committee reports including students' examinations results.
- 7.3.3 Availability of external examiners' reports indicating the reliability and validity of assessment methods.
- 7.3.4 The assessment principles, methods and practices must be



compatible with educational objectives and promote learning.

- 7.3.5 A verification of the number and nature of examinations given to students and papers marked by tutors.

STANDARD 8: FINANCIAL RESOURCES

The Institution should have sustainable financial resources to accomplish its academic obligations.

This will be demonstrated by;

- 8.1 Identifiable reliable/sustainable sources of funds
- 8.2 Effective planning, provision and management of financial resources integrated with academic priorities and programme requirements
- 8.3 Availability of adequate financial resources to achieve, maintain and enhance programmes and services to enable students to attain the required programme outcomes
- 8.4 Good management of institutional financial affairs that is subjected to regular internal and external auditing
- 8.5 Availability of institutional budget with a clear component dedicated to educational activities.

STANDARD 9: QUALITY ASSURANCE SYSTEM

The Institution is dynamic to initiate procedures for regular reviewing, updating of its structure, functions and rectifies deficiencies.

This will be demonstrated by;

- 9.1 Existence of a quality assurance policy and implementation plan
- 9.2 Existence of monitoring and evaluation system
- 9.3 Existence of operating procedures
- 9.4 Existence of a procedure for developing, approve and keeping of documents and records

STANDARD 10: STUDENTS AFFAIRS

The institution must have an admission policy including a clear statement on the process of selection of students, that is, through NACTE Central Admission System (CAS); capacity for student intake, support/counseling services and their representation into relevant institutional participatory bodies.

This will be demonstrated by:

10.1 Availability of admission and selection policy

- 10.1.1 The admission policy should be reviewed periodically, based on

relevant societal and professional data, to comply with the social responsibilities of the institution and the health needs of community and society

- 10.1.2 The statement on process of selection of students should include both rationale and methods of selection and may include description of a mechanism for appeal.
- 10.1.3 The review of admission policies and the recruitment of students would include improvement of selection criteria, to reflect the capability of students to become pharmaceutical personnel and to cover the variations in required competencies related to diversity of pharmacy

10.2 Availability of pre-determined student intake capacity of the institution

- 10.2.1 The size of student intake must be defined and related to the capacity of the pharmacy training institution at all stages of education and training.
- 10.2.2 The size and nature of student intake should be reviewed and regulated periodically to meet the needs of community and society.
- 10.2.3 The needs of community and society may include consideration of balanced intake according to gender, ethnicity and other social requirements, including the potential need of a special admission policy for underprivileged students.

10.3 Availability of student support and counseling services

- 10.3.1 A programme of student support, including counseling, must be offered by the institution.
- 10.3.2 Counseling should be provided based on monitoring of student progress and should address social and personal needs of students.
- 10.3.3 Social and personal needs should include academic support, career guidance, health problems and financial matters.
- 10.3.4 There should be an encouragement of active engagement with relevant pharmaceutical students associations nationally and internationally in order to develop individual professional and leadership qualities and foster international pharmaceutical links
- 10.3.5 There should be a smooth access to counseling in relation to poor progress, learning difficulties, impairment and disability issues, including any health and social problems
- 10.3.6 Students complaints policy, including the procedures should be made clear during orientation sessions



10.3.7 Motivational speakers should be invited to address professional issues, motivate and inform them on available career choices.

10.4 Availability of positions for student representation

10.4.1 The institution must have a policy on student representation and appropriate participation in the design, management and evaluation of the curriculum, and in other matters relevant to students.

10.4.2 Student activities and student organizations should be encouraged and facilitated.

10.4.3 Student activities and organizations should include student self-government and representation on educational committees and other relevant bodies as well as social activities.

STANDARD 11: GRADUANDS

Graduands must demonstrate the generic and personal qualities and possess the knowledge, skills and professional attributes necessary to apply to their workplace.

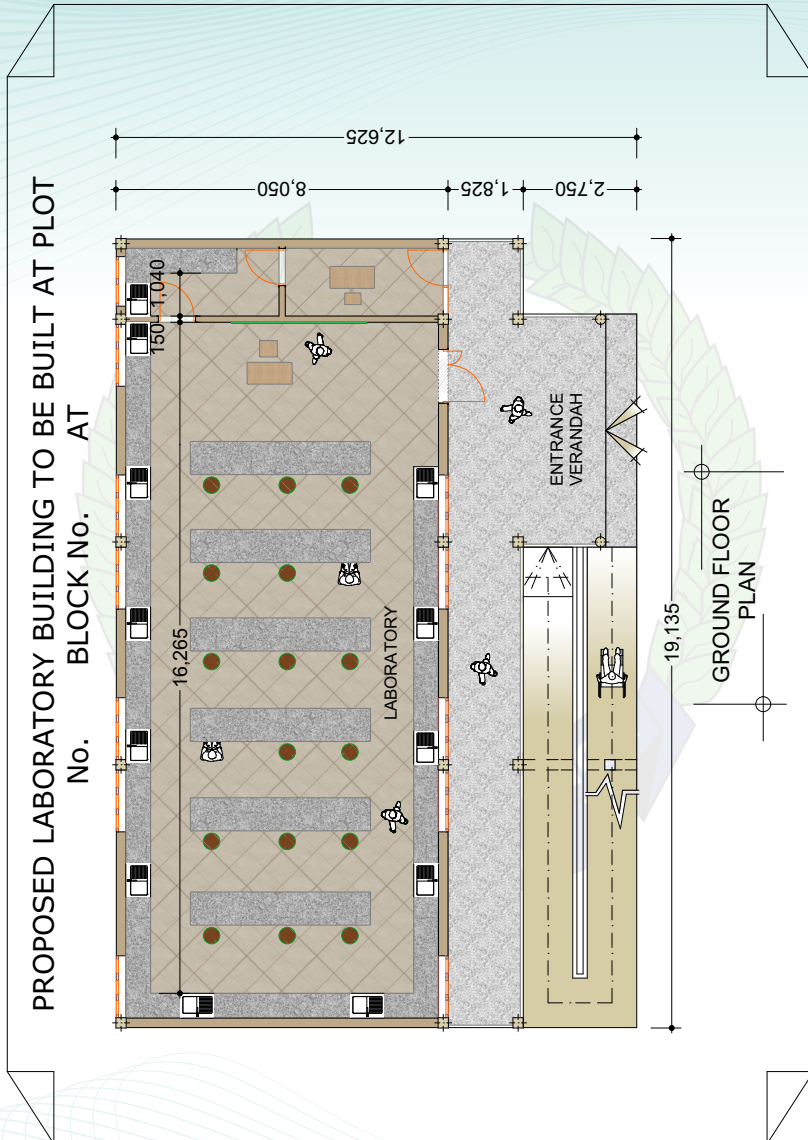
This will be demonstrated by:

11.1 Generic and personal qualities expected of a pharmaceutical personnel which include: empathy, leadership, effective communication, confidence, independent and critical thinking, commitment to lifelong learning, professional and ethical conduct, reflective practice, team work and problem solving.

11.2 Possession of knowledge, skills and professional attributes leading to their enrollment and enlisting as pharmaceutical personnel in a patient centered professional and ethical manner.

Appendix I

COMPOUNDING LABORATORY LAYOUT



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COMPOUNDING LABORATORY BASIC REQUIREMENTS

Recommended design features for a compounding laboratory section;

- (i). Walls to be oil painted or tiled in light colours easily washable with water and soap
- (ii). Floor- smooth and washable
- (iii). Well lit and ventilated
- (iv). Cupboards, shelves and racks
- (v). Water taps and sinks at a ratio 1:5 sinks/students
- (vi). Safety measures and first aid
- (vii). Stable tables and benches (water and chemical resistant)
- (viii). Relevant references/text books

Equipment and apparatus

S/N	ITEM DESCRIPTION	SPECIFICATIONS
1	Weighing scale - mechanical triple beam	E.g. Ohaus®, Model 311-00, Maximum weighing capacity: 311g. Sensitivity 0.01g.
2	Digital balance	
3	Sucking Tube (Bulb) / Pipette filler	Pipette filler, natural rubber, with 3 valves
4	Cylindrical measures	a) Glass and plastic graduated measuring cylinders with different size (5ml, 10ml, 25ml, 50ml, 100ml, 500ml, 1000ml) b) Conical flasks (glass and plastic) 25mL, 50mL, 100mL, 250 mL, 500 mL, 1000 mL c) Pipette (glass and plastic) 0.1-5mL, 1-10mL d) Beakers (glass and plastic) 5-10mL, 10-25 mL, 25-50 mL, 50-100mL, 100-500mL, 1000mL e) Jugs (plastic and stainless steel) 1-5 L



5	Mortars and Pestles	a) Porcelain (rough surfaced) 200 – 1000 mL capacity b) Melamine (smooth surfaced) 200 – 1000 mL capacity c) Glass (smooth surfaced) 200 – 1000 mL capacity
6	Water bath	e.g. electrical, solar, gas etc.
7	Heating source	e.g. electrical, solar, gas etc.
8	Aspirator for collection and storage of purified water	Round, screw capped with two carrying handles
9	Distiller/Reverse osmosis machine	
10	Test tubes	Pyrex glass
11	Test tube holder	Wooden, metal etc.
12	Stirring rods	Glass and plastic
13	Funnel	Glass and plastic (10-15 cm)
14	Filter papers	
15	Spatulas	Stainless steel, wooden, plastic
16	Thermometers	Up to 150-300°C
17	Sieves	Various sizes
18	Laboratory goggles	
19	Tablet/capsules counting trays	
20	Containers for liquid and semisolid	Plastic, glass (bottles, jars, tins, closures, tubes)
21	Droppers	Plastic
22	Fume chamber/laminar air flow	

Chemicals and reagents (Pharmaceutical/food grade)

S/N	RAW MATERIALS DESCRIPTION	S/N	RAW MATERIALS DESCRIPTION
1.	Acacia Powder	73.	Boric acid
2.	Anise oil	74.	Castor oil
3.	Glacial acetic acid	75.	Cod liver oil
4.	Acetone	76.	Calamine powder
5.	Arachis oil	77.	Calcium chloride
6.	Amaranth powder	78.	Calcium carbonate
7.	Aromatic Cardamom Tincture	79.	Calcium hydroxide powder
8.	Ascorbic acid	80.	Carbopol methoxylate (Carbomer 980)
9.	Ammonium Bicarbonate	81.	Carboxymethyl cellulose sodium (CMC)
10.	Ammonium ferric sulfate	82.	Cetomacrogol 1000
11.	Ammonium sulfate	83.	Cetostearyl alcohol



12.	Ammonium chloride	84.	Cetrimide powder
13.	Bentonite powder	85.	Chloroxylenol crystals BP
14.	Belladonna Tincture	86.	Chloral Hydrate
15.	Benzaldehyde Spirit	87.	Chlorocresol
16.	Benzyl benzoate	88.	Chalk BP
17.	Benzalkonium Chloride 50%	89.	Chlorbutol
18.	Benzoic Acid powder	90.	Chlorinated lime
19.	Black current syrup	91.	Chloroform B.P
20.	Brilliant green	92.	Coal tar strong solution
21.	Calcium hydroxide	93.	Chlorhexidine gluconate solution 5% v/v
22.	Cinnamon oil	94.	Compound Benzoin tincture
23.	Citric acid crystals	95.	Compound Orange spirit
24.	Camphor synthetic crystals	96.	Dextrose
25.	Copper (II) Sulphate	97.	Disodium Tetraborate (Borax)
26.	Chloroform spirit	98.	EDTA
27.		99.	Ethanol 95-99.9%
28.	Cresol	100.	Emulsifying wax
29.	Chlorocresol	101.	Eucalyptus oil
30.	Cascara elixir	102.	Ferric Ammonium Citrate
31.	Phenylmercuric Nitrate	103.	Ferrous sulphate crystals
32.	Magnesium trisilicate	104.	Glycerol
33.	Magnesium carbonate, Light	105.	Gentian violet crystals
34.	Magnesium Chloride	106.	Hard Paraffin
35.	Methyl Paraben	107.	Gelatin powder
36.	Methyl Salicylate	108.	Hydrous Wool Fat
37.	Oleic Acid	109.	Hydrogen peroxide 100 vol
38.	Propylene Glycol	110.	Heavy Kaolin finely, sifted
39.	Paracetamol powder	111.	Hydrocortisone acetate pulv
40.	Phenol crystals	112.	Ipecacuanha Tincture B.P
41.	Peppermint oil	113.	Iodine crystals/powders
42.	Piperazine citrate powder	114.	Ichthamol
43.	Podophyllum Resin	115.	Lactose powder
44.		116.	Light Kaolin (Natural)
45.	Proflavine Hemisulphate	117.	Liquid paraffin
46.	Propyl paraben	118.	Linseed oil
47.	Phenoxyethanol	119.	Lemon spirit
48.	Phenol glycerin	120.	Liquefied Phenol
49.	Potassium citrate	121.	Magnesium carbonate
50.	Potassium hydroxide	122.	Magnesium Sulphate
51.	Potassium permanganate crystals	123.	Magenta
52.	Potassium iodide	124.	Methyl cellulose

53.	Polysorbate 20	125.	Menthol crystals BP
54.	Polysorbate 80	126.	Sodium Lauryl sulphate
55.	Povidone powder	127.	Sodium metabisulphite
56.		128.	Sodium chloride
57.	Quillaia Tincture	129.	Sodium Phosphate
58.	Resorcinol	130.	Soft soap
59.	Rhubarb powder	131.	Sucrose
60.	Raspberry syrup	132.	Tragacanth powder B.P
61.	Rosemary oil	133.	Talc 'sterilized'
62.	Sulphur Precipitated powder	134.	Thymol Crystals
63.	Sodium bicarbonate	135.	Terpineol
64.	Starch, maize finely sifted	136.	Tartrazine powder , compound
65.	Salicylic acid	137.	Tetrachloroethylene
66.	Sodium phosphate, dibasic	138.	White soft Paraffin
67.	Sodium phosphate, tribasic	139.	Zinc Oxide
68.	Tannic Acid	140.	Zinc stearate
69.	Turpentine oil	141.	Zinc Chloride
70.	Terpene-less lemon oil	142.	Zinc Sulphate
71.	Tolu syrup	143.	White/Yellow Bees wax
72.	Wool Alcohols	144.	Yellow soft Paraffin

Protective wears

Goggles, face mask, white coat, examination gloves, clogs



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RECOMMENDED REFERENCE BOOKS FOR VARIOUS PHARMACY TRAINING PROGRAMS

1. PROGRAMME: DIPLOMA IN PHARMACEUTICAL SCIENCES

S/No.	NAME OF THE MODULE	KEY REFERENCES
1.	Leadership and Management	<ul style="list-style-type: none"> a) Ndeki S. <i>Management of health services</i>, CEDHA b) Peterson A.M, Kelly N.W (2014); <i>Leadership and management in pharmacy practice</i>, 2nd edition, CRC press c) MSH and WHO (1997) <i>Managing Drug Supply</i>, 2nd Edition. Kumarian Press d) Cole, G. A (2000) <i>Management Theory and Practice</i>, 6th Edition: Continuum Marquis, B. L and Huston, C. J (1996) e) <i>Leadership Roles and Management Functions in Nursing – Theory and Application</i>, 2nd Edition: Lippincott, Philadelphia.
2.	Counseling and Guidance Skills	<ul style="list-style-type: none"> a) Agrawal, R (2006) <i>Educational, Vocational Guidance and Counselling</i>, New Delhi, Sipra Publication. b) Bhatnagar A, and Gupta N, (1999) <i>Guidance and Counselling, A theoretical approach</i> (Ed) New Delhi, Vikash Publishing house. c) Jones A. J (1951), <i>Principles of Guidance and Pupil Personal work</i>. New York. McGraw Hill d) MHCDGEC (2005) <i>National guidelines for the clinical management of HIV and AIDS</i>, Dar es Salaam. e) Hubley, J. (1993). <i>Communicating Health. An action and guide to health and health promotion</i>. 1st Edition.
3.	Pharmaceutical Production	<ul style="list-style-type: none"> a) Senya S., et al (2011): <i>Tanzania Pharmaceutical Handbook, School of Pharmaceutical Sciences - Muhimbili</i> b) Polderman, J (1990) <i>Introduction to Pharmaceutical Production</i>: Novib, The Hague



		<ul style="list-style-type: none"> c) Lund, W. Editor (1994). The Pharmaceutical Codex, Principles and Practice of Pharmaceutics 12th Edition: The Pharmaceutical Press, London d) Watson, D. G (1999) Pharmaceutical Analysis: A Textbook for Pharmacy Students and Pharmaceutical Chemists: Churchill Livingstone, Edinburgh. a) Kamm, G., Kohler B. Editors (1995); Manual for Decentralized Infusion Production, Infusion Unit Project Tanzania e) Aulton M.E and Kevin M.G, Eds: (2013) Pharmaceutics the design and manufacture of medicines, 4th Churchill edition Livingstone f) Hugo and Russell (2011), Pharmaceutical Microbiology 8th Edition, Wiley-Blackwell publications g) Gennaro, R. A, et.al (eds) 1995 Remington: The Science and Practice of Pharmacy, Volume I & II, 19th edn: Mack Publishing Company, Easton, Pennsylvania 18042 h) Schmidt, O. (ed) 2000 Pharmaceutical Quality systems, Interpharm Press, Colorado. i) Rawlins E.A, Editor: 1977 Bentley's Textbook of Pharmaceutics, 8th Ed. Baillie're Tindall. London Kamm, G. and Kohler, B. Editors: 1995 Manual for Decentralized Infusion Production, Infusion Unit Project Tanzania j) Shayne C et al (2008), Pharmaceutical Manufacturing Handbook: Production and processes, John Wiley & Sons k) Aulton M.E (ed) 2013 Pharmaceutics: The design and manufacture of Medicines, 4th Churchill Livingstone, Edinburgh l) Gennaro, R. A, et.al (eds) 1990 Remington's Pharmaceutical Sciences 18th edn: Mack Publishing Company, Easton, Pennsylvania 18042
4.	Health and Medicines Policy	<ul style="list-style-type: none"> a) MoHSW (2003), The National Health Policy, Dar es salaam b) MoHSW (1991), The National Drugs Policy, Dar es salaam c) Tanzania vision 2025. www.mof.go.tz/mofdocs/overarch/Vision2025 d) WHO, Geneva, Report of the International conference on Primary Health Care Alma-Ata, USSR, 6-8 September 1978 http://www.who.int/publications/en/
5.	Health Financing	<ul style="list-style-type: none"> a) William, J (1999) Principles of Health Economics for Developing Countries, 1st Edition: WBI of Development Studies, Washington.



		b) Diane M. Dewar (2010) Essential of health economics c) Gashaw Andargie (2008) Introduction to health Economics; Ethiopia Public Health Training Initiative
6.	Basic Pharmacotherapy	a) Pharmacotherapy: A Pathophysiologic Approach, 8 th Edition, Joseph T. DiPiro, Robert L. Talbert, Gary C. Yee, Gary R. Matzke, Barbara G. Wells, L. Michael Posey b) Pharmacotherapy Casebook: A Patient-Focused Approach by Terry L. Schwinghammer, Julia M. Koehler c) MSH and WHO, (1997) Managing Drug Supply, 2 nd Edition. Kumarian Press d) Basic Principles of Pharmacotherapy by Mohammad H. Farjoo.
7.	Basic Veterinary Pharmacology	a) <i>Veterinary Pharmacology and Therapeutics</i> (2009); 9 th Edition by <u>Jim E. Riviere</u> , <u>Mark G. Papich</u> b) <i>British Pharmacopoeia 20 October, 2017 Edition</i> c) <i>Handbook of Veterinary Pharmacology</i> (2008); <u>Walter H. Hsu</u>
8.	Pharmaceutical Public Health	a) Alma Ata, USSR. WHO, Geneva, 1978, Report of the international conference on primary health care. b) Health promotion journal 1.1 113-127, 1986 c) Promoting health in developing countries: A call for Action/WHO/HEP/90.1,WHO, Geneva 1990. d) Health Service Executive (2011) Health promotion framework e) World Health Organization (1997) Jakarta declaration on leading Health Promotion into 21st century; Geneva: WHO
9.	Entrepreneurship	a) Zimmerer, T. W. and N. M. Scarborough. Essentials of Entrepreneurship and Small Business Management; 5 th Edition. Pearson Education International, New Jersey, 2008 b) Charantimath, P. M (2006) Entrepreneurship Development Small Business Enterprises: Pearson Education, Delhi. c) Buskirk, R. H (1994). The Entrepreneurs Handbook: Premier Entrepreneur Programs, Inc. Denver, Co.
10.	Operational Research	a) Kothari C.R (1985); <i>Research Methodology – Methods and techniques</i> , 2nd edition, Wiley Eastern Limited New Delhi b) Ranjit K (205); <i>Research methodology – step by step guide for begginers</i> , 2nd edition, Singapore, pearson education c) Smith F.J (2010); <i>Conducting your pharmacy research project</i> , 2 nd edition, Pharmaceutical Press, UK

		<p>d) Varkevisser, C. M, Pathmanathan, I and Brownlee, A (1991) Designing and Conducting Health Systems Research Projects, Vol. 2 Part I. IDRC, Ottawa</p> <p>e) Polit, D. F and Beck, C. T (2004) Nursing Research – Principles and Methods, 7th Edition: Lippincott Williams & Wilkins, Philadelphia</p> <p>f) Rosner B: Fundamental of Biostatistics, 4th edition, Duxbury Press, 1995.</p> <p>g) John Wiley and Sons (2003) Introductory Biostatistics.</p> <p>h) Sekaran, U. (2003) Research Methods for Business: A Skill-building Approach, New York, John Wiley.</p> <p>i) Saunders, M., Lewis, P. and Thornhill, A. (2007) Research Methods for Business Students, Harlow, Prentice Hall</p> <p>j) Anderson, D.R., Sweeney, D.J., Williams, T.A., Freeman, J. & Shoesmith, E. (2007) Statistics for Business and Economics, Thomson Learning, London.</p>
11.	Monitoring And Evaluation Of Medicines Use	<p>a) WHO, <i>Operational package for assessing monitoring and evaluating country pharmaceutical situations. Guide for coordinators and data collectors. (December 2007)</i></p> <p>b) 2011 The Global Fund to fight Against AIDS, Tuberculosis and Malaria, Monitoring and Evaluation Toolkit Fourth Edition.</p> <p>c) MSH and WHO, (1997) Managing Drug Supply, 2nd Edition. Kumarian Press</p>

2. PROGRAMME: CERTIFICATE IN PHARMACEUTICAL SCIENCES

S/No.	NAME OF THE MODULE	KEY REFERENCES
1.	Medicines and Medical Supplies Management	<p>a) MSH and WHO (2012) <i>Managing Access to Medicines and Health Technology</i>, 3rd Edition. Kumarian Press</p> <p>b) USAID DELIVER PROJECT, Task Order 1. 2011. <i>Tanzania: 2020 Supply Chain Modeling-Forecasting Demand from 2020–2024</i>. Arlington, Va: USAID DELIVER PROJECT, Task Order 1.</p> <p>c) World Health Organization (WHO), Regional Office for Africa Brazzaville 2004, Management of Drugs at Health Centre Level Training Manual.</p> <p>d) United Republic of Tanzania Ministry of Health, Community Development, Gender, Elderly and Children, Strategy for Development and</p>



		<p>Implementation of an Integrated Logistics System for Essential Health Commodities: Government Printers, Dar es Salaam</p> <p>e) Ndeki, S. Management of health services, CEDHA, Arusha</p>
2.	Law And Policies In Pharmacy Practice	<p>a) <i>United Republic of Tanzania (2011), Public Procurement Act, Dar es Salaam</i></p> <p>b) <i>MoHSW (2003), The National Health Policy, Government Printers Dar es Salaam</i></p> <p>c) <i>MSH and WHO (2012) Managing Access to Medicines and Health Technology, 3rd Edition. Kumarian Press</i></p> <p>d) <i>Jessop, D and Morrison (1994) Storage and Supply of Materials, 6th Edition, Prentice Hall</i></p> <p>e) <i>Tanzania, Food, Drugs and Cosmetics Act 2003, Government Printers Dar es Salaam</i></p> <p>f) <i>Pharmacy Act 2011, Government Printers Dar es Salaam</i></p> <p>g) <i>United Republic of Tanzania (1971), the drugs and prevention of illicit traffic in drugs act, Government Printers Dar es Salaam</i></p> <p>h) <i>MoHSW (1991), The National Drug Policy, Government Printers Dar es Salaam</i></p>
3.	Pharmaceutical Microbiology	<p>a) <i>Hugo and Russell(2011), Pharmaceutical Microbiology 8th Edition, Wiley-Blackwel publications</i></p> <p>b) <i>Aulton M.E and Kevin M.G, Eds: (2013) Pharmaceutics the design and manufacture of medicines,4th Churchill edition Livingstone</i></p> <p>c) <i>Cooper and Gunns 6th Eds (1987) Tutorial Pharmacy. S. J. Carter B.Pharm, FPS, CBS Publishers and Distributors; Delhi</i></p> <p>d) <i>Karen C. Carroll et al (2013); Jawetz, Melnick and Adelberg's Medical Microbiology 26th Ed. McGraw Hill Co. Inc.</i></p> <p>e) <i>Greenwood et al (2012); Medical Microbiology, 18th edition Churchill Livingstone</i></p>
4.	Pharmacology And Therapeutics	<p>a) <i>Foster R.W (1996); Basic Pharmacology, 11th edition, CRC publishers</i></p> <p>b) <i>Goodman and Gilman's (2011), The Phamacological Basis of therapeutics, 11th Ed.McGraw Hill</i></p> <p>c) <i>Laurence D.R, Bennett P.N, Brown J. (2000); Clinical Pharmacology, 8th edition, science press</i></p>

		<p>d) Tricia M. Berry et al (2009); Clinical Pharmacology made incredibly ease, 3rd edition, Lippincott Williams and Wilkins</p> <p>e) Richard A and Pamela C (2009), Lippincott's Illustrated Reviews: Pharmacology, 4th Edition, Lippincott Williams & Wilkins</p> <p>f) Tripathy/KD, (2013), Essentials of Medical Pharmacology, 7th edition, Jaypee brothers medical Publishers delhi</p> <p>g) Heinza et al (2000), Color atlas of Pharmacology, 2nd edition, Thieme Stuttgart</p> <p>h) James M.R et al (2008), Textbook of Clinical Pharmacology and Therapeutics, 8th Edition, Hodder Arnold London</p> <p>i) Rang, H. P et al (1995), Pharmacology, 3rd Edition, Churchill Livingstone</p>
5.	Rational Use Of Medicines	<p>a) <i>MSH and WHO (2012) Managing Access to Medicines and Health Technology, 3rd Edition. Kumarian Press</i></p> <p>b) <i>Standard Treatment Guidelines and National Essential Medicines List (2013) or latest.</i></p> <p>c) <i>Tanzania National Formulary</i></p> <p>d) Kathleen Holloway and Terry Green (2003), Drug and therapeutic committee A practical guide, W.H.O Geneva</p> <p>e) AMREF (2007) Distance Education Programme; Drug management and rational Use, Nairobi.</p>
6.	Pharmaceutical Organic Chemistry	<p>a) <i>Morrison R.T and Boyd R N (1997) Organic chemistry, 6th Edition, Prentice Hall of India, New Delhi</i></p> <p>b) <i>British Pharmacopoeia (2014)</i></p> <p>c) <i>United States Pharmacopoeia (2014)</i></p> <p>d) <i>International Pharmacopoeia (2014)</i></p> <p>b) Ternay, A.L (1976) contemporary Organic Chemistry, W.B. Saunders Co. Philadelphia</p> <p>c) Graham Solomon et al (2014), Organic Chemistry, 11th Edition, John Wiley and Sons</p> <p>d) Rama Rao Nadendla (2005); Principles of Pharmaceutical Organic Chemistry, MacMillan India</p> <p>e) Bruice Y (2014); Organic Chemistry, 7th edition Prentice Hall</p> <p>f) Wilson L., Gillson M (); Medicinal Chemistry, Lippincott Williams, California</p>



		g) Bhassin S.K, Gupta R.(2013); Pharmaceutical organic chemistry, Kindle edition, Elsevier Health sciences
7.	Quality Assurance Of Pharmaceutical Products	<p>e) Lund, W. Editor (1994) The Pharmaceutical Codex, Principles and Practice of Pharmaceutics 12th Edition: The Pharmaceutical Press, London</p> <p>f) Rawlins E.A, Editor: 1977 Bentley's Textbook of Pharmaceutics, 8th Ed. Baillie're Tindall. London</p> <p>g) Kamm, G., Kohler B. Editors (1995); Manual for Decentralized Infusion Production, Infusion Unit Project Tanzania</p> <p>h) Gennaro, R. A, et.al (eds) 1990 Remington's Pharmaceutical Sciences 18th edn: Mack Publishing Company, Easton, Pennsylvania 18042</p> <p>i) Shayne C et al(2008), Pharmaceutical Manufacturing handbook Production and processes: John Wiley & Sons</p>
8.	Pharmaceutics Theory And Compounding	<p>a) <i>Liebsch, B et al (1988): Tanzania Pharmaceutical Handbook, Dar es Salaam University Press.</i></p> <p>b) <i>Stocklosa MJ, pharmaceutical calculations, Williams & Wilkins London</i></p> <p>c) <i>United State Pharmacopoeia NF (2014), United States Pharmacopeial Convention</i></p> <p>d) <i>International Pharmacopoeia</i></p> <p>e) <i>European Pharmacopoeia</i></p> <p>f) Cooper and Gunns, Editors (1987) Dispensing for Pharmaceutical Students, 12th Ed. CBS Publishers and Distributors; Delhi</p> <p>g) Cooper and Gunns, Editors (2005) Tutorial Pharmacy, 12th Ed. CBS Publishers and Distributors; Delhi</p> <p>h) Lund, W. Editor (1994) The Pharmaceutical Codex, Principles and Practice of Pharmaceutics 12th Edition: The Pharmaceutical Press, London</p> <p>i) Rawlins E.A, Editor: 1977 Bentley's Textbook of Pharmaceutics, 8th Ed. Baillie're Tindall. London Kamm, G. and Kohler, B. Editors: 1995 Manual for Decentralized Infusion Production, Infusion Unit Project Tanzania</p>

		<p>j) Aulton M.E ed (2013), <i>Pharmaceutics: The design and manufacture of Medicines</i>, 4th Churchill Livingstone, Edinburgh</p> <p>k) Gennaro, R. A, et.al (eds) 1990 <i>Remington's Pharmaceutical Sciences</i> 18th edn: Mack Publishing Company, Easton, Pennsylvania 18042</p> <p>l) Shayne C et al(2008), <i>Pharmaceutical Manufacturing handbook Production and processes</i>: John Wiley & Sons</p> <p>m) Howard C Ansel (2010), <i>Pharmaceutical calculations</i>, 13th Edition: Lippincott Williams & Wilkins London.</p> <p>n) Senya, S, et al (2011): <i>Tanzania Pharmaceutical Handbook</i>, School of Pharmaceutical Sciences-MUHAS.</p> <p>o) Liebsch, B et al (1988): <i>Tanzania Pharmaceutical Handbook</i>, Dar es Salaam University Press.</p> <p>p) Marriot et al (2010), <i>Pharmaceutical Compounding and Dispensing</i>, 2nd edition, Pharmaceutical Press</p> <p>q) Loyd V. Allen (2005); <i>The art and science of pharmaceutical compounding</i>, 2nd edition, APhA Publications.</p> <p>r) B. Peter, et al (2012), <i>Dermatological Preparations for the Tropics</i>, 2nd edition, Beta Science Shop, University of Groningen, The Netherlands\</p> <p>s) Lund, W. Editor (1994): <i>The Pharmaceutical Codex</i>, 12th Edition. Pharmaceutical Press, London.</p> <p>t) Martindale the complete drug reference (2014), Pharmaceutical Press</p> <p>u) British Pharmaceutical Handbook (2015), Pharmaceutical Press</p>
9.	Health Information Management	<p>a) <i>MSH and WHO (2012) Managing Access to Medicines and Health Technology</i>, 3rd Edition. Kumarian Press</p> <p>b) <i>USAID DELIVER PROJECT, Task Order 1. 2011. Tanzania: 2020 Supply Chain Modeling-Forecasting Demand from 2020–2024. Arlington, Va.: USAID DELIVER PROJECT, Task Order 1.</i></p> <p>c) MoHSW, strengthening health information System, Government printers, Dar es Salaam</p> <p>d) United Republic of Tanzania Ministry of Health, Community Development, Gender, Elderly and Children, Strategy for Development and</p>



		<p>Implementation of an Integrated Logistics System for Essential Health Commodities: Government printers, Dar es Salaam</p> <p>e) International Council on Archives (1999), Managing Public sector records, Understanding computers an over view for records and archives: International Records Management Trust London</p> <p>f) Microsoft, introduction to Microsoft office 10.</p>
10.	Basic Pharmacognosy	<p>a) <i>Trease and Evans (2009); Pharmacognosy, 16th Edition: Saunders, London</i></p> <p>b) Joanne Barnes et al (2002), Herbal medicines 3rd Edition: Pharmaceutical Press</p> <p>c) Wallis T.E, Textbook of Pharmacognosy, CBS publishers and distributors, Oxford</p> <p>d) Robberss J.E, Speedie M.K, Pharmacognosy and Pharmacobiotechnology, warvelly company Baltimoere.</p> <p>e) Henrich M. (2012); Fundamentals of pharmacognosy and phytotherapy, Churchill Livingstone</p>

3. PROGRAMME: BASIC TECHNICIAN CERTIFICATE IN PHARMACEUTICAL SCIENCES (PHARMACEUTICAL DISPENSING COURSE)

S/No.	NAME OF THE MODULE	KEY REFERENCES
1.	Dispensing	<p>a) Cooper and Gunn's (1987) Dispensing for Pharmaceutical Students, 12th Ed. CBS Publishers and Distributors; Delhi</p> <p>b) Aulton M.E (ed) 1988 Pharmaceutics: The science of dosage form design. Churchill Livingstone, Edinburgh</p> <p>c) Aulton M.E (2013), Aulton's Pharmaceutics: The design and manufacture of medicines, 4th Edition, Churchill Livingstone, Edinburgh</p> <p>d) Rawlins E.A, (ed) 1977 Bentley's Textbook of Pharmaceutics, 8th Ed. Baillie're Tindall. London</p> <p>e) World Health Organization (WHO), Regional Office for Africa Brazzaville 2004, Management of Drugs at Health Centre Level Training Manual.</p> <p>f) International Pharmaceutical Federation (FIP) 1998, Good Pharmacy Practice (GPP) in</p>

		<p>Developing Countries, Recommendations for step-wise implementation.</p> <p>g) Ansel, H.C and Stoklosa, M. J (2001) Pharmaceutical Calculations, Lippincott Williams and Wilkins, Baltimore USA</p> <p>h) Senya, S, et al (2011): Tanzania Pharmaceutical Handbook, School of Pharmaceutical Sciences- MUHAS.</p> <p>i) Lund, W. Editor (1994): The Pharmaceutical Codex, 12th Edition. Pharmaceutical Press, London.</p> <p>j) Gennaro, A.R (1995), Remington: The science and practice of Pharmacy, 19th edition. Mack Publishing Co, Pennsylvania</p>
2.	Disease Control and Prevention	<p>a) Hugo and Russell (2011), Pharmaceutical Microbiology 8th Edition, willey-Blackwel publications</p> <p>b) Jan Ehuis and Peter Manschot, Communicable diseases, AMREF, Nairobi</p> <p>c) Thimothy Horne, Medical Microbiology, Churchill, Livingstone, London</p> <p>d) World Health Organization (1999), Guidelines for safe disposal of unwanted pharmaceuticals in and after emergencies</p> <p>e) Tanzania Food and Drugs Authority (2009), Guidelines for safe disposal of unfit medicines and cosmetic products Erik Nordberg (1999): Communicable Diseases, a Manual for Health Workers in Sub-Saharan Africa, AMREF, Nairobi</p> <p>f) MoHSW (2004): National Infection Prevention and Control (IPC) Guidelines for Healthcare Workers, Dar es Salaam</p> <p>g) Nyamwaya D, et al (1994): A Guide to Health Promotion through Water and Sanitation, AMREF; Nairobi</p> <p>h) MacDonald, J.J (1992): Primary Health Care, Earthcan.</p> <p>i) Hubley, J. (1993). Communicating Health. An action and guide to health and health promotion. 1st Edition.</p>



3.	Human Anatomy and Physiology	<ul style="list-style-type: none"> a) Ross and Wilson (2001): Anatomy and Physiology in Health and Illness, 9th Edition; Churchill Livingstone b) Rogde W, Anatomy and Physiology for nurses, Elsevier, New Delhi India c) Ganong W, Review of medical physiology, Lange medical publication, New Delhi India d) Laurie Kelly, McCorry (2008), Essentials of human physiology for pharmacy, 2nd edition, CRC press.
4.	Pharmaceutical Dosage Forms	<ul style="list-style-type: none"> a) B. Peter, et al (2012), Dermatological Preparations for the Tropics, 2nd edition, Beta Science Shop, University of Groningen, The Netherlands b) Edited by Allen Loyd, (2012), Remington the Science and practice of pharmacy, 22nd Edition, Pharmaceutical Press, UK c) Aulton M.E and Kevin M.G, (2013) Pharmaceutics the design and manufacture of medicines; 4th Churchill edition Livingstone d) Cooper and Gunns (1987) Dispensing for Pharmaceutical Students, 12th Ed. CBS Publishers and Distributors; Delhi e) Aulton M.E (1988) Pharmaceutics: The science of dosage form design. Churchill Livingstone, Edinburgh f) Rawlins E.A, (1977) Bentley's Textbook of Pharmaceutics, 8th Ed. Baillie're Tindall. London
5.	Pharmaceutical Calculations	<ul style="list-style-type: none"> a) Ansel, H.C and Stoklosa, M. J (2001) <i>Pharmaceutical Calculations</i>, Lippincott Williams and Wilkins, Baltimore USA b) Senya, S, et al (2011): <i>Tanzania Pharmaceutical Handbook</i>, School of Pharmaceutical Sciences-MUHAS. c) Joel L. Zatz, Maria Glauca Teixeira (2013), <i>Pharmaceutical Calculations</i>, 4th Edition, John Wiley & sons Inc. Canada. d) Ansel H C. (2010) <i>Pharmaceutical Calculations</i> 13th Edition, Wolters Kluwer Health Lippincott Williams & Wilkins
6.	Communication Skills	<ul style="list-style-type: none"> a) Bruce A., Berger (2009) Communication skills for pharmacist; building relationships, improving

		<p>patient care, 4th edition, American pharmacist association</p> <p>b) Kurtz, S. Silberman.J. and Draper, J; Teaching and learning communication skills in medicine</p> <p>c) Runga Paidiachy, D.M (1999) Interpersonal communication and Psychology 1st Edition.</p> <p>d) Mahundu, C.M. (1999). A manual on communication skills. 1st Edition.</p> <p>e) Hubley, J. (1993). Communicating Health. An action and guide to health and health promotion. 1st Edition.</p> <p>f) Burnard, P. (1992). A communication skills Guide for Health Care Workers 1st Edition.</p> <p>g) Pitt, B. (1991). Health, teachers Diploma Communication MOH Zimbabwe.</p>
7.	Basic Computer Applications	<p>a) Morris, M & Charles, M (2003): Logic and Computer Design Fundamentals, 17th Edition; Prentice Hall.</p> <p>b) International Council on Archives (1999), Managing Public sector records, Understanding computers an overview for records and archives: International Records Management Trust London</p> <p>c) Microsoft office (2010); Introduction to computers</p>
8.	Law and Ethics in Pharmacy Practice	<p>a) The Pharmacy Act, 2011; Government Printer, Dar es salaam Tanzania</p> <p>b) The Pharmacy (Education and Training) Regulations 2005; Government Printer, Dar es salaam Tanzania</p> <p>c) Tanzania, Food, Drugs and Cosmetics Act 2003, Government Printer, Dar es salaam Tanzania</p> <p>d) Appelbe and Wingfield (2001): Pharmacy Law and Ethics, 7th Edition. Pharmaceutical Press, London</p> <p>e) Code of Ethics and Professional Conduct 2009</p>



9.	Compounding of Pharmaceutical Preparations	<ul style="list-style-type: none"> a) Senya, S, et al (2011): <i>Tanzania Pharmaceutical Handbook</i>, School of Pharmaceutical Sciences-MUHAS. b) <i>Martindale the complete drug reference</i> (2014), Pharmaceutical Press c) <i>British Pharmaceutical Handbook</i> (2015), Pharmaceutical Press d) <i>United State Pharmacopoeia NF</i> (2014), <i>United States Pharmacopeial Convention</i> e) <i>European Pharmacopoeia</i> f) Liebsch, B et al (1988): <i>Tanzania Pharmaceutical Handbook</i>, Dar es Salaam University Press. g) Marriot et al (2010), <i>Pharmaceutical Compounding and Dispensing</i>, 2nd edition, Pharmaceutical Press h) Loyd V. Allen (2005); <i>The art and science of pharmaceutical compounding</i>, 2nd edition, APhA Publications. i) B. Peter, et al (2012), <i>Dermatological Preparations for the Tropics</i>, 2nd edition, Beta Science Shop, University of Groningen, The Netherlands\ j) Lund, W. Editor (1994): <i>The Pharmaceutical Codex</i>, 12th Edition. Pharmaceutical Press, London. k) <i>International Pharmacopoeia</i>
10.	Pharmaceutical Inorganic Chemistry	<ul style="list-style-type: none"> a) Holderness and Lambert (1987), <i>New Certificate Chemistry</i>, 6th Edition, b) Ramsden E.N (2000), <i>A-Level Chemistry</i>, 4th Edition c) Botharah K.G (2007), <i>Handbook of inorganic pharmaceutical chemistry</i>, 9th edition, Niral Pragashan d) Wal Ankita (2011); <i>Inorganic pharmaceutical chemistry</i>, 1st edition, e) Remington J.R, <i>Pharmaceutical Sciences</i>, Kessinger publishers, USA f) Moore F; <i>Fundamentals of chemistry</i>, Geoffrey Willkson, New York

11.	Basic Pharmacology	<p>a) <i>Goodman and Gilman's (2011), The Pharmacological Basis of therapeutics, 11th Ed. McGraw Hill</i></p> <p>b) Foster R.W (1996); Basic Pharmacology, 11th edition, CRC publishers</p> <p>c) Tricia M. Berry et al (2009); Clinical Pharmacology made incredibly ease, 3rd edition, Lippincott Williams and Wilkins</p> <p>d) Richard A and Pamela C (2009), Lippincott's Illustrated Reviews: Pharmacology, 4th Edition, Lippincott Williams & Wilkins</p> <p>e) Jaypee KD Trpathy, (2008), Essentials of Medical Pharmacology, 6th edition, Jaypee brothers medical Publishers Delhi</p> <p>f) Heinza et al (2000), Color atlas of Pharmacology, 2nd edition, Thieme Stuttgart</p> <p>g) James M.R et al (2008), Textbook of Clinical Pharmacology and Therapeutics, 8th Edition, Hodder Arnold London</p> <p>h) Rang, H. P et al (1995), Pharmacology, 3rd Edition, Churchill Livingstone</p>
12.	Medical Stores Keeping	<p>a) <i>MSH and WHO (2012) Managing Access to Medicines and Health Technology, 3rd Edition. Kumarian Press</i></p> <p>b) World Health Organization (WHO), Regional Office for Africa Brazzaville 2004, Management of Drugs at Health Centre Level Training Manual.</p> <p>c) Shirima, L. L (1988) Basic Store-keeping and Warehouse Management. General Publication</p> <p>d) United Republic of Tanzania, Public Procurement Act, 2004, Dar es Salaam</p> <p>e) Jessop, D and Morrison (1994) Storage and Supply of Materials, 6th Edition, Prentice Hall</p> <p>f) Laurie Lyons, Editor, (2003) Guidelines for the Storage of Essential Medicines and Other Health Commodities. John Snow, Inc./DELIVER in collaboration with the World Health Organization</p>



PHARMACY COUNCIL



APPLICATION FOR APPROVAL AS A PROVIDER OF PHARMACY EDUCATION & TRAINING

I/We hereby declare that education and trainings that intended to be offered in relation to stated Pharmacy Qualification(s) will be carried out in accordance with conditions determined by the Council.

I/We hereby agree that any proposals or claims made in this application may be monitored at anytime.

SECTION A. PARTICULARS OF THE APPLICANT

Name of Institution: _____

Ownership: (tick appropriate)

Public

- ☐ Local Government Authority
- ☐ Police
- ☐ Military
- ☐ Ministry of Health
- ☐ Prisons
- ☐ Parastatal
- ☐ Other specify:.....

Private

- ☐ NGO's
- ☐ FBO
- ☐ Private for Profit
- ☐ Private not for profit



Physical Location:

Plot Number:.....Street:.....
District:.....Region:
Address:Telephone:.....
Email Address:
Website:

SECTION B : PARTICULARS OF OWNER/DIRECTOR OF THE INSTITUTION

NameNationality*

Telephone Number:Email Address.....

* If Non-Tanzanian, attach relevant documents

SECTION C: PARTICULARS OF HEAD OF PHARMACY DEPARTMENT

NameNationality*

Academic Qualification:Years of Experience in Training:

Telephone Number:Email Address

* If Non-Tanzanian, attach relevant documents

SECTION D: TYPES OF PHARMACEUTICAL PROGRAM(S) OFFERED

- ☐ Basic Technician Certificate in Pharmaceutical Sciences
- ☐ Technician Certificate in Pharmaceutical Sciences
- ☐ Ordinary Diploma program in Pharmaceutical Sciences
- ☐ Pharmacy Bachelor degree
- ☐ Continuing Professional Development (CPD) program
- ☐ Others: Specify



SECTION E: PHARMACY TRAINING STANDARDS (Please tick where appropriate)

1. Is the person/institution registered with the National Council for Technical Education (NACTE) or Tanzania Commission of Universities (TCU)?

Yes

No

If **yes**, please supply the evidence

Comment:.....

2. Presence of a Compounding laboratories for practical training?

Yes

No

Comments:.....

3. Presence of a library with relevant pharmacy reference books?

Yes

No

Comment:.....

4. Presence of classes for pharmacy training?

Yes

No

How many do you have? -----

Comment:.....

5. Availability of MOU between institutions and areas for field work/ practical attachment (community, industrial, hospital, research etc)

Yes

No

Comments:.....

SECTION F: DOCUMENTS TO BE SUBMITTED

No.	<i>Documents to be submitted</i>	<i>Original</i>	<i>Copy</i>
1.	A copy of Institutional Strategic Plan		
2.	A copy of Institution almanac		
3.	List of pharmacy staff including (full time, part time, supporting staff) with valid contracts, commitment letters, academic qualifications and CV		
4.	List of key pharmacy reference books available (<i>specific to the pharmacy programme</i>)		
5.	List of equipments and reagents for pharmacy compounding laboratory		
6.	MOU between the institution and areas of field work/practical attachment (community, industrial, hospital, research etc) for which your school will use for teaching purposes		
7.	Evidence of payment of inspection fee of 1,500,000/= which is subject to change depending on number of visits		

SECTION G: DECLARATION BY APPLICANT

I, the above applicant, declare that, the information furnished herewith is true and correct.

Applicant's Signature/Stamp

Application Date:



JINSI KUFANYA MALIPO KWA NJIA YA M-PESA, TIGO-PESA NA AIRTEL-MONEY- BARAZA LA FAMASI





FOR MORE INQUIRIES CONTACT ZONES:

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