Syllabus and Curriculum of Diploma in Physiotherapy Technician course

(To be implemented From 2015 - 16 session)

Uttar Pradesh State Medical Faculty, Lucknow.

Index

•	Objectives of the course	3-3
•	Outline of curriculum of 'Diploma in Physiotherapy Technician' course	4-7
•	Eligibility criteria & duration of the course	8-8
•	Scheme of examination	9-10
•	Schedule of the course	11-13
•	Details of first year course curriculum	14-20
•	Details of Second year course curriculum	21-26

OBJECTIVES OF THE COURSE

To prepare a Physiotherapy technician who -

- Can examine and assess deficits of neurological & musculoskeletal systems.
- Can advise and execute appropriate exercise & electrotherapy.
- Can maintain rich communication with related consultant surgeons & physicians
 & follow their order.
- Can give psychological support to the patients and their relatives.

Outline of Curriculum of Diploma in Physiotherapy Technician course

FIRST YEAR

THEORY (Classes: 9 AM to 12 Noon)

First paper : Syllabus covers -

- 1. General Anatomy & Physiology (Cytology, Histology, Osteology and only basics of all organ systems of body).
- 2. Only basics of relevant Pathology, Pharmacology & Microbiology.

Second paper : Syllabus covers -

- 1. Detailed Anatomy of bones, muscles, joints, nerves of body.
- 2. Basics of exercise therapy, electrotherapy, physics used in physiotherapy, biomechanics & kinesiology.
- 3. Hand hygiene & prevention of cross infection.
- 4. Basic life support (BLS) & Cardio-pulmonary resuscitation (CPR).

PRACTICAL (Classes: 1 PM to 4 PM)

Practical classes will be after lunch; from 1 PM to 4 PM.

Students must present in the hospital/ physiotherapy lab for practicals.

During first year, they should be there only as "Observers" in practical classes.

(Observership for Various technics of exercise & electrotherapy, Vital monitoring.)

Following subjects must be taught; though there will not be any exam from these-

- 1. Basic Computer skills.
- 2. Basic English.
- 2. Soft skills like Interpersonal relationship skills & moral education.

Outline of Curriculum of Diploma in Physiotherapy Technician course

SECOND YEAR

THEORY (claases:9 AM to 12 Noon)

First paper :	Syllabus	covers	-
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- 1. Only relevant surgical & medical conditions (relevant to Physiotherapy but other than Orthopedics and neurological systems).
- 2. Nursing Procedures like vital recording, IM/IV/SC injection, Oxygen therapy, Nebulization, IV infusion.

Second paper :	Syllabus covers -
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- Physiotherapy in Orthopaedics, Neurological, Medical, Surgical & Sports related conditions.
- 2. Drugs used in Physiotherapy & BLS.
- 3. Basic biomedical engineering physics of machines used in physiotherapy.

SECOND YEAR

PRACTICAL (claases:9 AM to 12 Noon)

Practical exams syllabus should cover-

- Hands on training of Vital Monitoring .
- Hands on training of various exercise therapies.
- Hands on training of various electrotherapies.
- Hands on training of BLS.

ELIGIBILITY CRITERIA FOR ADMISSION & DURATION OF THE COURSE

COURSE DURATION:-

• It is 2 years, **full time** Diploma Course.

ELIGIBITY:-

 Candidate must have passed 12th with Physics, Chemistry, Biology Or

Physics, Chemistry, Maths

with 35% marks in Intermediate exams.

(From UP board or any other recognised board).

• Candidate must have completed age of 17 years of age as on 31st December of admission year. There is no maximum age limit for the admission.

SCHEDULE OF EXAMINATION

FIRST YEAR

Paper	<u>Subjects</u>	<u>Mark</u>	<u>Internal</u> <u>Assessme</u> <u>nt Marks</u>	<u>Total</u> <u>Marks</u>	<u>Pass</u> <u>Marks</u>	Duration of Exam.
<u>First</u> <u>Paper</u> <u>Theory</u>	 General Anatomy & Physiology (Cytology, Histology, Osteology and only basics of all organ systems of body). Only basics of relevant Pathology, Pharmacology & Microbiology. 	75	25	100	50	3 Hours
<u>Second</u> <u>Paper</u> <u>Theory</u>	 Detailed Anatomy of bones, muscles, joints, nerves of body. Basics of exercise therapy, electrotherapy, physics used in physiotherapy, biomechanics & kinesiology. Hand hygiene & prevention of cross infection. Basic life support (BLS) & Cardiopulmonary resuscitation (CPR). 	75	25	100	50	3 Hours
Practical	Oral & Practical	75	25	100	50	3 Hours

SCHEDULE OF EXAMINATION

SECOND YEAR

Paper	<u>Subjects</u>	<u>Mark</u>	<u>Internal</u> <u>Assessme</u> nt Marks	<u>Total</u> <u>Marks</u>	<u>Pass</u> <u>Marks</u>	Duration of Exam.
<u>First</u> <u>Paper</u> <u>Theory</u>	 Only relevant surgical & medical conditions (relevant to Physiotherapy but other than Orthopedics and neurological systems). Nursing Procedures like vital recording, IM/IV/SC injection, Oxygen therapy, Nebulization, IV infusion. 	75	25	100	50	3 Hours
<u>Second</u> <u>Paper</u> <u>Theory</u>	 Physiotherapy in Orthopaedics, Neurological, Medical, Surgical & Sports related conditions. Drugs used in Physiotherapy & BLS. Basic biomedical engineering physics of machines used in physiotherapy. 	75	25	100	50	3 Hours
Practical	Oral & Practical	75	25	100	50	3 Hours

SCHEDULE OF COURSE

(List of holidays, Total hours, Subject wise allottement of hours)

• List of Holidays:-

Total Holidays	- 105 days
Preparatory holidays	- 10 days
Gazetted holidays	- 23 days
Winter vacation	- 10 days
Summer vacation	- 10 days
Sundays	- 52 days

• Total Hours :-

Theory classes per day	- 3 Hours
Practical classes per day	- 3 Hours
Total hours per day	- 6 Hours
Total days & hours in One year (after deduction of holidays)	- 260 days or - 1560 Hours

SCHEDULE OF COURSE

Subject wise allottement of hours

FIRST YEAR

Theory (780 Hours) Practical (780 Hours)

<u>First</u> Paper	1.General Anatomy & Physiology (Cytology, Histology, Osteology and only basics of all organ systems of body).	235 Hrs
<u>Theory</u>	2.Only basics of relevant Pathology, Pharmacology & Microbiology.	100 Hrs
	1.Detailed Anatomy of bones, muscles, joints, nerves of body.	190 Hrs
<u>Second</u> <u>Paper</u> <u>Theory</u>	2.Basics of exercise therapy, electrotherapy, physics used in physiotherapy, biomechanics & kinesiology.	160 Hrs
	3.Hand hygiene & prevention of cross infection.	15 Hrs
	4.Basic life support (BLS) & Cardio-pulmonary resuscitation (CPR).	10 Hrs
<u>Third</u> <u>Paper</u> <u>Practical</u>	As described in curriculum	780 Hrs
<u>Theory:</u> Other	1.Basic Computer skills.	30 Hrs
Subjects (These subjects must	2.Basic English.	30 Hrs
be taught: though there will not be any exam from these)	3.Soft skills like - Interpersonal relationship skills & moral education	10 Hrs

SCHEDULE OF COURSE

Subject wise allottement of hours

SECOND YEAR

Theory (780 Hours) Practical (780 Hours)

<u>First</u> Paper	1.Only relevant surgical & medical conditions (relevant to Physiotherapy but other than Orthopedics and neurological systems).	280 Hrs
<u>Theory</u>	2. Nursing Procedures like vital recording, IM/IV/SC injection, Oxygen therapy, Nebulization, IV infusion.	20 Hrs
Second	1.Physiotherapy in Orthopaedics, Neurological, Medical, Surgical & Sports related conditions.	400 Hrs
<u>Paper</u> <u>Theory</u>	2.Drugs used in Physiotherapy & BLS.	30 Hrs
	3.Basic biomedical engineering physics of machines used in physiotherapy.	50 Hrs
<u>Third</u> <u>Paper</u> <u>Practical</u>	As described in curriculum	780 Hrs

PAPER 1st Theory	Topics	Hours.
	1. General Orientation about parts of human body. Various terms used in Anatomy. Total numbers of bones, their names & location. Basic idea about organzation of body ,from cell to organ systems.	06 Hrs
_	2. Structure of Animal cell, Cell organelles & their functions	06 Hrs
_	3. Human tissue, types, structure & functions.	10 Hrs
	4. Osteology: Names, location, identification and basic details of all bones. (Details of skull bones is not required).	20 Hrs
1.General	5. Joints: types, basic structure & examples.	06 Hrs
Anatomy & Physiology	6. Skin & appendages.	02 Hrs
(Cytology, Histology, Osteology and only basics of all organ systems of	 7. GIT: : Location, Gross structure, various parts & their functions. Details of process of food ingestion, digestion, absorption & defaecation. (Microscopic structure is not required.) 	20 Hrs
body).	8. Respiratory tract: Location, Gross structure, various parts & their functions. Details of breathing mechanism, different respiratory volumes. (Microscopic structure is not required.)	20 Hrs
	9. Urinary tract: Gross structure, various parts & their functions. (Microscopic structure is not required.) Process of urine formation & voiding.	20 Hrs
	10. Male reproductive system: Only gross structure & functions of different parts. (Microscopic structure is not required.)	05 Hrs
	11. Female reproductive system: Only gross structure & functions of different parts. (Microscopic structure is not required.) Menstrual cycle.	05 Hrs

PAPER 1st	Topics	Hours.
Theory		
1.General Anatomy &	 Endocrine system: Hormones secreted by Pituitary, Thyroid, Parathyroid, Pancreas, Adrenal cortex, Adrenal medulla, Gonads & functions of different hormones. (Details of structure of these glands not required). 	20 Hrs
Physiology (Cytology, Histology,	13. Gross structure of brain & spinal cord. Functions of different parts of brain & spinal cord.(Details not required.)	20 Hrs
Osteology and only basics of all organ systems of	 Blood: Composition & Functions. Details about Plasma, RBCs, WBCs, Platelets, Clotting system. 	30 Hrs
body).	 Gross structure & functions of sensory Organs - Eye, Ear, Nose, Tongue.(Details not required). 	20 Hrs
	16. Basic gross structure of heart, vessels opening into heart & Leaving the heart. Arterial & Venous tree of body.	20 Hrs
	17. Lymphatic system: Structure & Functions.	10 Hrs
	18. Inumune system: Components & various mechanisms of defense.	10 Hrs

PAPER 1st Theory	Topics	Hours.
	1. Basic steps of Acute & chronic inflammation.	03 Hrs
	2. Basics of Necrosis & apoptosis.	03 Hrs
	3. Basics of Shock.	03 Hrs
	4. Basics of Disorders of blood coagulation system.	08 Hrs
2 Only basiss	5. Basics of Disorders of Immune system of body.	05 Hrs
2.Only basics of relevant	6. Modes of disease transmission & prevention of infection.	05 Hrs
Pathology, Pharmacology &	7. Sterilization & methods of sterilization used in hospitals.	10 Hrs
a Microbiology.	8. Basic idea about types of Bacteria, Virus, Fumgi.	20 Hrs
	9. Rouths of drug administration.	02 Hrs
	10. Adverse effects & side effects of drugs.	02 Hrs
	11. Basic idea of Analgesics : Opioid & NSAIDs & Skeletal muscle relaxants	06 Hrs
	12. Basic idea of Drugs use in Cough & expectoration.	01 Hrs
	13. Basic idea of Drugs used in B.asthma & COPD.	02 Hrs
	14. Basic idea of Drugs used in GIT.	08 Hrs
-	15. Basic idea of Anti Microbials.	20 Hrs
	16. Basic idea of Anti H-1 Histaminics & Corticosteroids.	03 Hrs

PAPER 2nd	Topics	
Theory	1. General structure of long bone, flat bones (Histology & gross).	05 Hrs
-	2. Detaited Histology & Physiology of skeletal muscles, ligaments & tendons.	10 Hrs
	3. Details of bones of upper limb.	05 Hrs
-	4. Details of bones of lower limb.	05 Hrs
1.Detailed Anatomy of	5. Details of bones of vertebral column.	03 Hrs
bones, muscles, joints, nerves	6. Details of ribs & sternum.	02 Hrs
of body.	 Details of muscles of upper limb (origin, insertion, action, nerve supply & surface marking). 	25 Hrs
-	26 Details of muscles of lower limb (origin, insertion, action, nerve supply & surface marking).	25 Hrs
_	26 Details of muscles of abdomen & pelvic floor (origin, insertion, action, nerve supply & surface marking).	10 Hrs
-	11 Details of muscles of neck (origin, insertion, action, nerve supply & surface marking).	05 Hrs
	12 Details of shoulder girdle, Shoulder, Elbow, Wrist, Hip, Knee & ankle, sub talar joints).	35 Hrs
-	13 Details of Basics of other joints of body.	10 Hrs
-	14 Details of Brachial, sacral & lumbar plexes.	20 Hrs
-	15 Details of spinal & cranial nerves.	20 Hrs
-	16 General structure of Arteries, veins, capillaries.	05 Hrs
-	17 Arterial & Venous tree of body.	05 Hrs

PAPER 2nd	Topics	Hours.
Theory	-	
	1. <u>Mechanical Principles:-</u> Definition of Biomechanics, Axis and Planes, Kinematics, Kinetics, gravity, centre of gravity, line of gravity, base of support, Equilibrium, fixation and stabilization, force, types of forces, levers of the body and their mechanical	25 Hrs
2. Basics of exercise therapy,	advantage, pulleys, springs, Elasticity, type of muscle contraction, range of muscle work, the group action of muscles, spurt and shunt muscles	
electrotherapy,	2. Gait	10 Hrs
physics used in	3. Posture	05 Hrs
physics used in physiotherapy,	4. Joint structure and function of all joints of the body	30 Hrs
biomechanics & kinesiology.	-type, articulating surface, osteokinematics, Arthrokinematics, Pathomechanics.	201115
•	5. Physics and Basic Electrical Components. Electromagnetic radiation, conductors, & Non Conductors of electricity, Transmission of heat, Physical effects of heat, static electricity, electric shock, earth shock.	20 Hrs
	 6. Methods of heating the tissue. Physiological effects of heat, Paraffin wax bath, Hot packs, moist packs, Infra-red rays, U.V. rays. Definition, production, preparation of apparatus & patient, Physiological effects, techniques, dosage, indication, contraindication, dangers and precautions are to be covered. 	20 Hrs
	7. Low Frequency Currents. Faradic & Galvanic currents, SD Curve, Iontophoresis, TENS. Definition, production, preparation of apparatus & patient, Physiological effects, techniques, dosage, indication, contraindication, dangers and precautions are to be covered.	20 Hrs
	8. Cryotherapy definition, production, preparation of apparatus & patient, Physiological effects, techniques, dosage, indication, contraindication, dangers and precautions	20 Hrs
	9. Medium Frequency current. definition, production, preparation of apparatus & patient, Physiological effects, techniques, dosage, indication, contraindication, dangers and precautions	20 Hrs
	10. HIGH FREQUENCY CURRENTS SWD, MWD, US. definition, production, preparation of apparatus & patient, Physiological effects, techniques, dosage, indication, contraindication, dangers and precautions	30 Hrs

PAPER 2nd Theory	Topics	Hours.
2. Basics of exercise therapy,	11. <u>LASERS</u> Definition, Types, Production, Indications, contraindications Technique of Application	20 Hrs
electrotherapy, physics used in physiotherapy,	12. Mechanical traction and CPM Uses and Technique of application,Precautions.	10 Hrs
biomechanics & kinesiology.	13. <u>MASSAGE THERAPY</u> History and development ,Types and techniques, Physiological and therapeutic effects of various Manipulations, Indications and contraindications, Massage protocol for various conditions.	20 Hrs

PAPER 2nd Theory	Topics	Hours.
3.Hand hygiene &	1. Hand hygiene & method of Hand washing.	15 Hrs
prevention of cross infection.	2. Prevention of cross infection.	15 Hrs

PAPER 2nd Theory	Topics	Hours.
4.Basic life support (BLS) & Cardio-	1. Code blue.	05 Hrs
pulmonary resuscitation (CPR).	2. Details of basic life support (BLS) & Cardio-pulmonary resuscitation (CPR).	35 Hrs

Curriculum for Practical :- First Year

Diploma in Physiotherapy Technician

	Topics
	1. Observing various types of electro therapies.
	2 Observing various types of exercise therapy.
Practical	3.Care of Unconscious patient.
	4.Monitoring Temperature(manual).
	5.Monitoring Pulse (manual).
	6.Monitoring Respiration (manual).
	7.Monitoring BP (manual).
	8.Basic life support (BLS).

PAPER 1st Theory	Topics	Hours.
	1. History taking. General examination of the patient. Filling Case-sheet. Common clinical words.	10 Hrs
	 Hypertension:- Def, Causes, Pathology, Clinical fectures, Investigation & Management. 	05 Hrs
_	3. Hypotension :- Def, Causes, Pathology, Clinical fectures, Investigation & Management.	02 Hrs
	 Diabetes mellitus :- Def, Causes, Pathology, Clinical fectures, Investigation & Management. 	10 Hrs
1.Only relevant surgical & medical	5. <u>Diseases of blood :-</u> Anaemia, Basics of coagulation Bleeding disorders & Haemophilia.	20 Hrs
conditions (relevant to Physiotherapy but other than Orthopedics	6. <u>Respiratory Tract :-</u> Pneumonia, Tuberculosis, B.asthma, COPD, Bronchiectasis, Collapse of lung, Pneumonitis, Pleural effusion, Pneumothorax, Empyema thoracis, Cancer lung.	50 Hrs
and neurological systems).	 <u>Diseases of GIT & Liver & GB :-</u>Reflux Oesophagitis, Peptic ulecrs, Gastritis, Instestinal Obstruction, Hepatitis, Cirrhosis of liver, Cholecystitis. 	40 Hrs
	8. <u>Disease of Heart :-</u> CHF, Condiac arrest, Isaemic heart disease, Rheumatic Heart diseases.	30 Hrs
	9. <u>Diseases of Urinary tract:-</u> Urolithiasis, Benign prostatic hyperplasia.	03 Hrs
-	10. <u>Endocrine system :-</u> Diabetes mellitus, hypo & Hyper thyroidism.	20 Hrs
-	11. <u>Miscellaneous:-</u> Hypo & Hyper Natraemia, Hypo & Hyper Kalaemia, Hypo & Hyper Calcaemia.	10 Hrs
	12. <u>Infections diseases :-</u> TB, Typhoid, Malaria, Dengue fever, Leprosy, AIDS, Amoebiasis.	50 Hrs
	13. Burn & Physiotherapy management of burn.	05 Hrs

PAPER 1st Theory	Topics	Hours.
~	1. Temperature monitoring & Fever.	02 Hrs
	2. Pulse monitoring.	02 Hrs
2.Nursing	3. BP monitoring.	02 Hrs
Procedures like vital	4. Respiration monitoring.	01 Hrs
recording, IM/IV/SC	5. Types of Injection routes.	01 Hrs
injection, Oxygen	6. IM Injection.	01 Hrs
therapy, Nebulization,	7. IV Injection.	01Hrs
IV infusion.	8. SC Injection.	01 Hrs
	9. Oxygen Therapy.	03 Hrs
	10. Nebulization	03 Hrs
	11. IV Infusion (Also with infusion pump).	01 Hrs
	12. Care of Unconscious patient.	02 Hrs

PAPER 2nd Theory	Topics	
	1. Details of examination of nervous system.	20 Hrs
-	2. Details of Stroke & role of Physiotherapy in Stroke.	30 Hrs
	3. Details of Meningo-encephalitis & role of Physiotherapy in Meningo-encephalitis.	20 Hrs
	4. Details of Epilepsey & role of Physiotherapy in Epilepsy.	10 Hrs
1.Physiotherapy	 Details of Intracranial bleed & Head injury & role of Physiotherapy in Intracranial bleed & Head injury. 	30 Hrs
in Orthopaedics, Neurological, Medical, Surgical &	6. Details of Traumatic Para & Quadriplegia & role of Physiotherapy in Traumatic Para & Quadriplegia.	30 Hrs
& Sports related conditions	 Details of Facial nerve palsy & role of Physiotherapy in Facial nerve palsey. 	10 Hrs
	8. Details of Parkinsonism & role of Physiotherapy in Parkinsonism.	05 Hrs
	9. Details of M.gravis & role of Physiotherapy in M. gravis.	05 Hrs
	10. Details of Motor neuron d's, GB syndrome & role of Physiothearpy in Motor neuron d's, GB syndrome.	20 Hrs
	11. Details of cerebral palsy & role of Physiotherapy in Cerebral palsy.	10 Hrs
	12. Details of Ataxia & role of Physiotherapy	05 Hrs
	13. Details of Types of fracture, basic principle of management of all types of fractures.	15 Hrs
	14. Details of Important fractures & role of Physiotherapy in Important fractures.	40 Hrs
	15. Details of Osteo-arthritis, Rheumatoid arthritis, Gouty arthritis, ankylosing spondylitis & role of Physiotherapy in Osteo-arthritis, Rheumatoid arthritis, Gouty arthritis, ankylosing spondylitis	20 Hrs
	16. Details of Tennis elbow, Golfer's elbow, Tenosynovitis, Plantar fascitis & role of Physiotherapy in Tennis elbow, Golfer's, elbow Tenosynovitis, Plantar fascitis.	10 Hrs

PAPER 2nd Theory	Topics	Hours.
	17. Basics of Subluxation & dislocations of joints & role of Physiotherapy in Subluxation & dislocations of joints.	20 Hrs
	18. Details of Osteoporosis, Osteomalacia & role of Physiotherapy in Osteoporosis, Osteomalacia.	10 Hrs
1.Physiotherapy	19. Details of PIVD & role of Phyisotherapy in PIVD.	10 Hrs
in Orthopaedics, Neurological, Medical, Surgical &	20. Details of Spondylolisthesis & role of Phyisotherapy in Spondylolisthesis.	05 Hrs
& Sports related conditions	21. Various types of sprains & strains & their basic principle of management.	15 Hrs
-	22. Details of CTEV & role of Physiotherapy in CTEV.	05 Hrs
	23. Details of Scoliosis, lordosis, Kyphosis & role of Physiotherapy in Scoliosis, lordosis, Kyphosis.	05 Hrs
	24. Basic idea of Genu/ cubitus varum, Genu/cubitus valgum,	05 Hrs
	25. Details of TB of Bone, Osteomyelitis & role of Physiotherapy in TB of Bone, Osteomyelitis.	15 Hrs
	26. Splints & Prosthesis used in Orthopaedics.	30 Hrs

PAPER 2nd Theory	Topics	Hours.
	1. Use of NSAIDs ,opioid analgesics.	10 Hrs
2.Drugs used	2. Use of skeletal muscle relaxants.	03 Hrs
in Physiotherapy	3. Use of topical analgesics and muscle relaxants.	02 Hrs
& BLS.	4. Use of emergency drugs.	15Hrs

PAPER 2nd	Topics	Hours.
Theory		
	1. About USG machine	10 Hrs
3.Basic		
biomedical	2.About TENS machine.	10 Hrs
engineering		
physics of	3.About IFT machine.	10 Hrs
machines used		
in physiotherapy.	4. About Diathermy machine.	10 Hrs
	5. About tread mill.	05Hrs
	6. About infra red machine.	05Hrs

Curriculum for Practical :- Second Year Diploma in Physiotherapy Technician

Topics
1. Hand on training on various types of electro-therapies.
2. Hand on training on various types of exercise therapy.
3. IM Injection.
4. IV Injection.
5. SC Injection.
6. Use of Infusion pump.
7. Nebulisation.