Syllabus and Curriculum
of
Diploma in Optometry Technician course

(To be implemented From 2016 - 17 session)

Uttar Pradesh State Medical Faculty, Lucknow.

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OBJECTIVES OF THE COURSE

To prepare a **Optometry technician** who -

- Can record vision.
- Can assess error of refraction & measure it with retinoscopy and subjective refraction.
- Can use common instruments & equipments related to ophthalmology.
- Can perform procedures like Tonometry, Syringing, Fundus photo, Slit lamp examination, Ophthalmoscopy, Corneal staining, FB removal, Dressing of eye etc.
- Can prepare & prescribe glasses/spectacles and low vision aids.
- Can assist common ophthalmic surgeries.
- Can play role in Blindness control programmes run by government.
  .
- Is aware of latest machines like LASERS, OCT, Femtosecond etc.

Outline of Curriculum of Diploma in Optometry Technician course

FIRST YEAR

THEORY (Classes: 9 AM to 12 Noon)

First paper : **Syllabus covers** -
1. Only basic idea of General Anatomy & Physiology (Cytology, Histology, Osteology and only basics of all organ systems of body: **Part 1**

Second paper : **Syllabus covers** -
1. Detailed Ocular Anatomy and Physiology:Part 1 **2.** Basic physics related to light and physical, physiological optics: **Part 2**

FIRST YEAR

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/ Optometry lab for practicals.

- Hands on training of Vision monitoring.
- Hands on training of Subjective refraction.
- Hands on training of Retinoscopy(wet and dry).
- Hands on training of Prescribing lenses & prisms.
- Hands on training of Tonometry (Schiotz).
- Hands on training of Corneal staining.
- Hands on training of Ishihara chating.
- Hands on training of Schirmer's test & TBUT.

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 Optometry Technician course

SECOND YEAR

THEORY (claases:9 AM to 12 Noon)

First paper : **Syllabus cover**s -
1. Details of Diseases of eye. 2. Nursing Procedures like vital recording, IM/IV/SC injection, Oxygen therapy, Nebulization, IV infusion.

Second paper : **Syllabus cover**s -
1. Mechanical optics and Lenses, Lenses prescription. 2. Instruments and equipments used in eye. 3. Community ophthalmology. 4. Drugs used in Optometry.

SECOND YEAR

PRACTICAL (claases:9 AM to 12 Noon)

Practical exams syllabus should cover-

- Hands on training of slit lamp biomicroscope examination.
- Hands on training of Gonioscopy.
- Hands on training of Applanation tonometry.
- Hands on training of Syringing.
- Hands on training of Perimetry.
- Hands on training of Keratometry, A scan.
- Hands on training of B Scan.
- Hands on training of Direct ophthalmoscopy.
- Hands on training of Indirect Ophthalomoscopy.
- Hands on training of assistance in Common Ocular surgeries.
- Hands on training of Fundus Camera & FFA.

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	Subjects	Mark	Internal Assessment Marks	Total Marks	Pass Marks	Duration of Exam.
First Paper Theory	**1** Only basic idea of General Anatomy & Physiology (Cytology, Histology, Osteology and only basics of all organ systems of body 2.Only basics of relevant Pathology, Pharmacology, Microbiology & Ocular Pharmacology.	75	25	100	50	3 Hours
Second Paper Theory	1.Detailed Ocular Anatomy and Physiology. 2.Basic physics related to light and physical, physiological optics. 3.Hand hygiene & prevention of cross infection. 4.Basic life support (BLS) & Cardio-pulmonary resuscitation (CPR).	75	25	100	50	3 Hours
Practical	Oral & Practical	75	25	100	50	3 Hours

SCHEDULE OF EXAMINATION

SECOND YEAR

Paper	Subjects	Mark	Internal Assessment Marks	Total Marks	Pass Marks	Duration of Exam.
First Paper Theory	**1.** Details of Diseases of eye **2.**Nursing Procedures like vital recording, IM/IV/SC injection, Oxygen therapy, Nebulization, IV infusion.	75	25	100	50	3 Hours
Second Paper Theory	1.Mechanical optics and Lenses, Lenses prescription. 2.Instruments and equipments used in eye. 3.Community ophthalmology 4.Drugs used in Optometry .	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:-**

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

First Paper Theory	1.Only basic idea of General Anatomy & Physiology (Cytology, Histology, Osteology and only basics of all organ systems of body).	150 Hrs
	2 Only basics of relevant Pathology, Pharmacology, Microbiology & Ocular Pharmacology.	150Hrs
Second Paper Theory	**1**. Detailed Ocular Anatomy and Physiology	160 Hrs
	2. Basic physics related to light and physical, physiological optics	140 Hrs
	3.Hand hygiene & prevention of cross infection.	30 Hrs
	4.Basic life support (BLS) & Cardio-pulmonary resuscitation (CPR).	40 Hrs
Third Paper Practical	As described in curriculum	780 Hrs
Theory: Other Subjects (These subjects must be taught; though there will not be any exam from these)	**1**.Basic Computer skills.	30 Hrs
	2.Basic English.	30 Hrs
	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)

First Paper Theory	1. Details of Diseases of eye	250 Hrs
	2.Nursing Procedures like vital recording, IM/IV/SC injection, Oxygen therapy, Nebulization, IV infusion.	20 Hrs
Second Paper Theory	1.Mechanical optics and Lenses, Lenses prescription .	300 Hrs
	2.Instruments and equipments used in eye	100 Hrs
	3.Community ophthalmology.	50 Hrs
	4.Drugs used in Optometry .	60 Hrs
Third Paper Practical	As described in curriculum	780 Hrs

Details of Curriculum for First Year Diploma in Optometry Technician

PAPER 1st Theory	Topics	Hours.
1. Only basic idea of General Anatomy & Physiology (Cytology, Histology, Osteology and only basics of all organ systems of body).	**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.	02Hrs
	2. Structure of Animal cell, Cell organelles & their functions	02 Hrs
	3. Human tissue, types, structure & functions.	05 Hrs
	4. Osteology: Names, location, identification of all bones. (Details of skull bones is not required).	10 Hrs
	5. Joints: types, basic structure & examples.	02 Hrs
	6. Skin & appendages.	02 Hrs
	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
	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.	10 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

Details of Curriculum for First Year Diploma in Optometry Technician

PAPER 1st Theory	Topics	Hours.
1.Only basic idea of General Anatomy & Physiology (Cytology, Histology, Osteology and only basics of all organ systems of body).	**12.** 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).	10 Hrs
	13. Gross structure of brain & spinal cord. Functions of different parts of brain & spinal cord.(Details not required.)	10 Hrs
	14. Blood: Composition & Functions. Details about Plasma, RBCs, WBCs, Platelets, Clotting system.	10 Hrs
	15. Gross structure & functions of sensory Organs - Eye, Ear, Nose, Tongue.(Details not required).	05 Hrs
	16. Basic gross structure of heart, vessels opening into heart & Leaving the heart. Arterial & Venous tree of body.	10 Hrs
	17. Lymphatic system: Structure & Functions.	05 Hrs
	18. Inumune system: Components & various mechanisms of defense.	07 Hrs

Details of Curriculum for First Year Diploma in Optometry Technician

PAPER 1st Theory	Topics	Hours.
2.Only basics of relevant Pathology, Pharmacology, Microbiology & Ocular Pharmacology. .	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
	5. Basics of Disorders of Immune system of body.	05 Hrs
	6. Modes of disease transmission & prevention of infection.	05 Hrs
	7. Sterilization & methods of sterilization used in hospitals.	10 Hrs
	8. Basic idea about types of Bacteria, Virus, Fumgi.	20 Hrs
	9. Routes of drug administration.	02 Hrs
	10. Adverse effects & side effects of drugs.	02 Hrs
	11. Basic idea of Analgesics : Opioid & NSAIDs.	02 Hrs
	12. Basic idea of Anti Microbials.	20 Hrs
	13. Basic idea of Anti H-1 Histaminics & Corticosteroids.	02 Hrs
	14. Anti Glaucoma drugs.	15 Hrs
	15. Dyes used in Ophthalmology.	05 Hrs
	16. Artificial tears & Other drugs used in dry eye.	05 Hrs
	17. Topical Antimicrobials & NSAIDs and Steroids used in eye.	20 Hrs
	18. Mydriatics & Cycloplegics	05 Hrs
	19. Various methods of drug administration in eye.	15 Hrs

Details of Curriculum for First Year Diploma in Optometry Technician

PAPER 2nd Theory	Topics	Hours.
1.Detailed Ocular Anatomy and Physiology	1.Detailed Structure of Orbit & Contents of orbit.	10 Hrs
	2.Eye ball: Comprehensive anatomy.	05 Hrs
	3.Extra Ocular muscles: gross structure, origin, insertion, nerve supply and action.	10 Hrs
	4.Blood supply to eye & Nerve supply to eye.	15 Hrs
	5.Gross, microscopic anatomy, blood & nerve supply of Conjunctiva.	10 Hrs
	6.Gross, microscopic anatomy, blood & nerve supply of Cornea.	15 Hrs
	7.Gross, microscopic anatomy, blood & nerve supply of Sclera.	10 Hrs
	8.Gross, microscopic anatomy, blood & nerve supply of Uvea.	15 Hrs
	9.Gross, microscopic anatomy, blood & nerve supply of Lens.	10 Hrs
	10.Gross, microscopic anatomy, blood & nerve supply of Angle of AC.	05 Hrs
	11.Physiology of aqueous production and drainage.	10 Hrs
	12.Gross, microscopic anatomy, blood & nerve supply of Vitreous.	05 Hrs
	13.Gross, microscopic anatomy, physiology, blood & nerve supply of retina & optic nerve.	20 Hrs
	14.Gross, microscopic anatomy, physiology, blood & nerve supply of Visual/pupillary pathway.	20 Hrs

Details of Curriculum for First Year Diploma in Optometry Technician

PAPER 2nd Theory	Topics	Hours.
2. Basic physics related to light and physical, physiological optics.	1.Introduction	05 Hrs
	2.Light – Definition & Theory	03 Hrs
	3.Properties of Light	05 Hrs
	4.Reflection & Refraction	07 Hrs
	5.Diffraction & Dispersion	05 Hrs
	6.Transmission & Absorption	05 Hrs
	7.Geometrical Optics	05 Hrs
	8.Spherical Lenses	05 Hrs
	9.Astigmatic & Toric Lenses	05 Hrs
	10.Prism	05 Hrs
	11.Vergence of Light	05 Hrs
	12.Magnification of Lenses	05 Hrs
	13.Homocentric Lenses System Gausse's Theorem	05 Hrs
	14.Optical Aberration of images -Spherical Aberration - Chromatic Aberration	05 Hrs
	15.Lasers Fundamental	10 Hrs
	16.Schematic & Reduced Eye Angle Alpha	05 Hrs
	17.Visual Acuity	05 Hrs
	18.VA-Testing	15 Hrs
	19.Retinocopy	20 Hrs
	20.Cycloplegic Drugs & Mydriatics	05 Hrs
	21.Subjective Refraction	05 Hrs
	22.Simple & Toxic Transposition	05 Hrs
	23.Spherical Equivalent	05 Hrs
	24.Accommodation & Convergence	15 Hrs

Details of Curriculum for First Year Diploma in Optometry Technician

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

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

Curriculum
for
Practical :- First Year
Diploma in Optometry Technician

	Topics
Practical	• Hands on training of Vision monitoring.
	• Hands on training of Subjective refraction.
	• Hands on training of Retinoscopy(wet and dry).
	• Hands on training of Prescribing lenses & prisms.
	• Hands on training of Tonometry (Schiotz).
	• Hands on training of Corneal staining.
	• Hands on training of Ishihara chating.
	• Hands on training of Schirmer's test & TBUT.