

Syllabus of Diploma in Ophthalmic Technology
First Year

S.No.	Subject	Distribution of time			Distribution of Marks			
		Hours Per Week			Exam			
		Th	PR	T	Th	PR	Viva-Voce	Total
OP-1	Basic Ocular Science	1	-	1	100	-	-	100
OP-2	Ophthalmic Instruments	1	-	1	100	-	-	100
OP-3	Basic Optics	1	-	1	100	-	-	100
OP-4	Community Ophthalmology-I	1	-	1	100	-	-	100
OP-5	Instrumental Handling & Application	-	32	32	-	75	25	100
OP-PRS	Sessional Assessment (PRS)*	-	-	-	50	25	25	100
	Total	4	32	36				600

Syllabus of Diploma in Ophthalmic Technology
Second Year

S.No.	Subject	Distribution of time			Distribution of Marks			
		Hours Per Week			Exam			
		Th	PR	T	Th	PR	Viva-Voce	Total
OP-6	Common Ocular Disorders	1	-	1	100	-	-	100
OP-7	Ophthalmic Techniques	1	-	1	100	-	-	100
OP-8	Refraction	1	-	1	100	-	-	100
OP-9	Community Ophthalmology-II	1	-	1	100	-	-	100
OP-10	Clinical Skill Training	-	32	32	-	75	25	100
OP-PRS	Sessional Assessment (PRS)*	-	-	-	50	25	25	100
	Total	4	32	36				600



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Syllabus of Diploma in Ophthalmic Technology

FIRST YEAR

Sr. No.	Subjects
1	Basic Ocular Science
2	Ophthalmic Instruments
3	Basic Optics
4	Community Ophthalmology – I
5	Instrumental Handling & Application
6	Sessional Assessment

Basic Ocular Science

RATIONALE :

This paper introduces eye as the primary organ of vision and its surrounding structures. It gives in detail the anatomy (structure) and physiology (functions) of the various parts of visual system.

CONTENTS :

1. Anatomy of eye : Orbit, its relations and vascular communications, eyelids and its glands, conjunctiva, lacrimal apparatus, extra-ocular muscles, cornea and sclera, iris, ciliary body and choroid, lens and vitreous, retina and optic nerve, visual pathway, circulation of the eye, Cr. Nerves, para-sympathetic and sympathetic nerves in relation to eye, embryology of the eye, pituitary gland and cavernous sinus.
2. Physiology of the eye : functions of parts of eye, structure and functions of the eyelid, functions of lacrimal apparatus and tear film dynamics, aqueous humour and intraocular pressure, pupil and papillary reflexes, pathways, pupil abnormalities, eye movements, extra and intra-ocular muscles ; functions and control, light sense and night vision, colour sense (colour vision), visual pathways and fields, visual cortex, uni-ocular and bin-ocular vision, accommodation and convergence, electro-retino-gram and adaptation, visual acuity and testing.
3. Ocular microbiology : Normal flora of eye, fungi and protozoa, bacteria (aerobic/anaerobic), viruses, laboratory techniques, sterilization.
4. Ocular Pharmacology : General routes of drug administration and osmotic agents, miotics, mydriatics and cycloplegics, ocular hypotensives, local anaesthetics and analgesics, sedatives and tranquilizers, general anaesthetic agents, antiseptics, anti-viral and anti-fungal agents, ocular anti-inflammatory agents, chemo-therapeutic agents, misc. drugs used by ophthalmologist.

REFERENCE BOOKS :

1. Ophthalmic Assistant – Vol I (Anatomy) – Dr. L.P. Agarwal
2. Physiology of the eye : Arvind Eye Hospital

Ophthalmic Instruments

RATIONALE :

Ophthalmic instruments are used in diagnosis and treatment of eye diseases. These instruments are delicate and costly; require regular servicing of these equipments. The appendix presents general guidelines for the care of instruments, including special cautions to observe and techniques to employ for their handling, cleaning and maintenance.

CONTENTS :

1. Ophthalmic equipments and Ophthalmic techniques
 - 1.1 Ophthalmic equipments
 - 1.2 Examination of eye



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1.3 Special investigations –

- 1.3.1 Conjunctival smear, flourescein staining and pH testing , colour vision.
- 1.3.2 Varoius eye instruments, their principles and use, refractometer, autorefractor and focimeter, tension taking (Schioz\ Applanation \ Non contact), keratometry, pachometry, anaesthesiometry and dark adaptometry, A and B scan, field examination \ charting, ophthalmic photography, fundus photography and fundus flourescein angiography.

REFERENCE BOOKS :

1. Text book of Ophthalmology – Dr. A.K. Khurana
2. Essentials of ophthalmology – Dr. L.P. Agarwal

Basic Optics

RATIONALE :

This paper gives a basic knowledge of optics, lenses and the nature of refractive error.

CONTENTS :

1. Physical Optics
 - General properties of light, principles of reflection of light, principles of refraction of light, lenses and their combinations.
2. Physiological optics
 - General concepts of eye as a refracting apparatus.

REFERENCE BOOKS :

1. Principles of optic and refraction 6th Ed. – Dr. L.P. Agarwal
2. Theory and practice of squint and orthoptics – Dr. A.K. Khurana

Community Ophthalmology – I

RATIONALE :

He\she is able to assist in early detection of visual impairment and control of blindness as a part of health man power development.

CONTENTS :

Eye screening programme, school clinics and surveys, blind person aid and his problems, rehabilitation of the blind, health education in the field of eye care, functioning of mobile eye health care units, causes of visual impairment and blindness.

Organizing eye camps : Reach in and reach out concept, permission, site selection, publicity, asepsis, operative and post – op care, follow-up, role of authorities and local body funding.

REFERENCE BOOKS :

1. Opth. Assistant Vol. V (Community Opth.) - Dr. L.P. Agarwal

Instrumental Handling & Application

RATIONALE :

The students at the end of training shall be able to render assistance to Ophthalmologists /doctors in eye institutions.

PRACTICALS :

1. Practical as an ophthalmic assistant



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- 1.1 Initial patient contact and reception and ethics.
- 1.2 Office manners, secretarial assistance, record and their retrieval.
- 1.3 Ophthalmic equipments.
- 1.4 Examination of eye.
2. Sterilization and theatre :
General aspects, sterilization and disinfection, theatre setup and preparation, autoclaving and hot air oven, eye instruments, operating room equipment and supplies.
3. Practical training programme :
 - 3.1 Reception \ record keeping rational duty, receiving patients phone calls, making appointments, making OPD/Indoor tickets, consent taking, vision (Distance \ near), history taking.
 - 3.2 Refraction :

Vision recording – distance \ Near	250 cases
Color vision (Ishihara) Recording	25 cases
Identification of lenses (spherical, cylindrical and prisms and their neutralization	25 cases

Syllabus of Diploma in Ophthalmic Technology

SECOND YEAR

Sr. No.	Subjects
1	Common Ocular Disorders
2	Ophthalmic Techniques
3	Refraction
4	Community Ophthalmology – II
5	Clinical Skill Training
6	Sessional assessment (PRS)*

Common Ocular Disorders

RATIONALE :

This paper makes the student aware about the general concepts of disease and the processes by which diseases evolve. He/she will be able to understand the disorders that occur in various parts of the eye and ocular adnexa. He/she learns the causes of these disorders, their effects on vision and the procedures used to treat them.

CONTENTS :

Common eye diseases :

Diseases of eyelids, orbit, adnexa, conjunctiva, cornea, sclera, uvea, lens, retina, injuries of eye, optic nerve, glaucoma.

REFERENCE BOOKS :

1. Opth. Assistant Vol. I (Anatomy) - Dr. L.P. Agarwal
2. Physiology of the eye : Arvind eye hospital

Ophthalmic Techniques

RATIONALE :

The appendix presents general guidelines for the care of instruments, including special cautions to observe and techniques to employ for their handling, cleaning and maintenance.



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CONTENTS :

1. Ophthalmic Techniques
 - 1.1 Examination of eye
 - 1.2 Special investigations
Conjunctival smear, flourescein staining and pH testing , colour vision.
2. Sterilization and theatre :
General aspects, sterilization and disinfection, theatre set up and preparation, autoclaving and hot air oven, eye instruments, operating room equipment and supplies, surgical scrub, laying operating trolley for surgery, pre & post operative instructions, care and dressing.
3. Surgical assistance in operative procedures on :
Lids, lacrimal apparatus, extra ocular muscles, cornea, lens, glaucoma, enucleation, trauma, retina & vitreous, laser applications.

REFERENCE BOOKS :

1. Text book of Ophthalmology Dr. A.K. Khurana
2. Essentials of Ophthalmology Dr. L.P. Agarwal

Refraction

RATIONALE :

This paper gives a basic knowledge of the nature of refractive errors. Thus he/she will be able to understand the basic principles and elements of procedures used to discover, measure and correct refractive errors.

CONTENTS :

Physiological optics :

General concepts of eye as a refracting apparatus, corneal and lenticular system, optical resolution of the eye, visual angles, visual acuity and axis, optical aberrations of the eye, introduction to refractive errors (myopia, hypermetropia, astigmatism, anisometropia and anisiekonia, accommodation, convergence, presbyopia, retinoscopy, subjective examination, ophthalmoscopy, principles of eye procedures : Slit limp, tonometry, contact lenses, LVA.

REFERENCE BOOKS :

1. Principles of optic and refraction 6th Ed. Dr. L.P. Agarwal
2. Duke elder's practive of refraction Abram
3. Theory and practice of squint and orthoptics Dr. A.K. Khurana
4. Practical orthoptic in treatment of squint Keith Lyle

Community Ophthalmology –II

RATIONALE :

He\she will be able to assist in implementation of national programme for control of blindness.
He\she should impart health education regarding ophthalmic disorders.

CONTENTS :

1. Eye screening programme, school clinics and surveys, causes of visual impairment and blindness.
Organizing eye camps : reach in and reach out concept, permission, site selection, publicity, spepsis, operative and post-op care, follow-up, role of authorities and local body funding.



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2. Nutrition and eye diseases
3. Industrial hazards and their prevention
Industrial injuries, accidents and foreign bodies, U.V., Infrared and other radiation injuries, thermal and chemical injuries.

REFERENCE BOOKS :

1. Ophthalmic Assistant Vol. V (Community Opth.) Dr. L.P. Agarwal

Clinical Skill Training

RATIONALE :

The students at the end of training shall be able to assist in the estimation and treatment of errors of refraction and common disorders of eye. He/she shall be able to render, assistance to ophthalmologist\ doctors in eye institutions.

PRACTICALS :

1. Practical as an Ophthalmic Assistant :

- 1.1 Initial patient contact and reception and ethics.
- 1.2 Office manners, secretarial assistance, record and their retrieval.

2. Sterilization and theatre :

General aspects, sterilization and disinfection, theatre set up and preparation, autoclaving and hot air oven, eye instruments, operating room equipment and supplies, surgical scrub, laying operating trolley for surgery, pre and post operative instructions, care and dressing.

3. Surgical assistance in operative procedures on :

Lids, lacrimal apparatus, extra ocular muscles, cornea, lens, glaucoma, enucleation \ eye banking, trauma, retina and vitreous, laser applications.

4. Practical training programme :

- 4.1 Reception \ record keeping rotational duty, receiving patients phone calls, making appointments, making OPD\Indoor tickets, consent taking, vision (Distance\Near), History taking.

- 4.2 Refraction :

Vision recording – Distance \ Near	250 cases
Colour vision (Ishihara) Recording	25 cases
Identification of lenses (Spherical\ Cylindrical and prisms and their neutralization	25 cases
Lensometry and vertex refraction meter	25 cases
Retinoscopy and prescription of glasses	150 cases
Subjective verification & P.M.T.	150 cases
Auto-refraction	50 cases

- 4.3 Visual fields :


Central	10 cases
Applanation Tonometry	5 cases

- 4.4 Treatment room and minor surgical procedures :

Instillation of drops	50 cases
Sub conjunctival injection	5 cases
Laying the trolley for minor surgery	15 cases
Syringing	30 cases
Tonometry & Tonometer care	25 cases
Epilation	25 cases

- 4.5 Eye OPD :

History taking	50 cases
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4.6 Indoor cases (Including record keeping) 50 cases
History taking, preparation of eye (Pre-op),
Blood pressure, urine and smear examination,
Laying of trolley and post operative care
Dressing rotational duty

4.6 Operation Theatre:

- Preparation of theatre 3 times
- Carbolisation and fumigation 3 times
- Autoclaving \ sterilization of instruments,
Swabsticks, pads, drums 3 times
- Laying of trolley for surgery (Cataract,
Glaucoma, Sac squint)
- Maintenance of O.T. equipments \ surgical
Instruments 25 cases



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