

**Government of Odisha
Health & Family Welfare Department**

DIRECTORATE OF MEDICAL EDUCATION AND TRAINING, ODISHA

**COURSE CURRICULUM FOR
CERTIFIED OPHTHALMIC SURGICAL ASSISTANT (CSA)**

A. GENERAL INFORMATION

(a) After the completion of the course, the trainees will be able to:

1. Read and understand ophthalmic medical records
2. History taking from all patients
3. Measure vision, IOP, lacrimal duct patency, Schirmer's test and vital signs
4. Do preliminary examination of the eye, assess pupillary reflex and record the details
5. Assist the Ophthalmologist in the outpatient and ward sections
6. Identify ocular emergencies
7. Instill eye drops
8. Irrigate the eye
9. Bandage tying and untying
10. Dressing preparation, bin packing
11. Tonometer cleaning and sterilization
12. Handle glucometer and test urine sugar
13. Assist in corneal scraping
14. Cleaning of OT
15. Prepare trolley for various procedures and surgeries
16. Drape the patient and apply bridle suture to secure the eye ball
17. Assist the surgeon during different types of surgeries
18. Sterilization of instruments
19. Applying tropical anaesthesia
20. Handling instruments and equipments like cleaning and sterilization by autoclave, gas sterilisation
21. Draping and applications of Bridle suture
22. Cleaning the eye of post op patients
23. Counselling of post op medicines
24. Identify post –operative complications
25. Assist the ophthalmologists in the postoperative care
26. Case presentation of postoperative patients
27. Provide counselling and support for the patients
28. Write intra operative notes
29. Carry out the treatment instructions given by the ophthalmologists for in-patients and manage the wards.

(b) What knowledge / Theory they should have to perform the above activities?

OPD & Ward	OT
<ul style="list-style-type: none">• Anatomy and Physiology of the eye• Basic microbiology• Ocular Pharmacology• Ocular diseases• Instruments and equipment• Investigation procedures	<ul style="list-style-type: none">• Basic knowledge of suture, lenses and needles• Basic knowledge of different instruments used• Operation Theatre Management• Introduction to Ocular and general

<ul style="list-style-type: none"> • Vital signs • Disinfection and Sterilization procedures • Systemic diseases • Maintenance of medical records • Community ophthalmology 	<p>anaesthesia</p> <ul style="list-style-type: none"> • Steps in minor surgeries • Steps in various types of surgeries • Difference between Septic and Aseptic process • Different types of sterilization • Aseptic protocols
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(c) What Practical / Skills they should be imparted?

- Eliciting history of the ocular complaints , usage of medications, operations and other medical complaints from the patients
- To do preliminary examination of the eye and recording the observations
- Use Snellen’s chart to assess the visual acuity of the patient
- Use both contact & non-contact tonometer to measure intraocular pressure (IOP)
- Check the lacrimal duct patency and record the results of the investigation
- Measure the pulse and respiration rate of the patient
- Use a thermometer or a digital thermometer to measure temperature
- Use a sphygmomanometer &stethoscope to measure blood pressure of the patient
- Use a glucometer to measure blood sugar
- Use Schirmer’s strip to assess the severity of dry eye
- Use the ECG device to record an electrocardiogram of the patient
- Prepare dressing materials (wiper, eye-pad and bandage)
- To tie a bandage for eye and untie it
- Bin packing of the dressing materials for sterilization
- Irrigate the eye to wash cornea and conjunctiva
- Dilate the pupil using dilating eye drops
- Clean the eye before and after surgery
- Handle sharps (blades , knives, needles) carefully and dispose them properly after use
- Make the patient comfortable by proper bed making
- Prepare the patient for surgery
- Take care of the patient after surgery
- Set up trolley for ward rounds and for various surgeries in the OT
- Handle different instruments and equipment in OT during surgery
- Prepare the correct eye for surgery
- Drape the patient for surgery
- Give topical anesthesia before surgery
- Clean the instruments in the operation theater by ultrasonic cleaning
- Sterilize materials and instruments by using autoclave, Ethylene oxide and other means
- Disinfect the OT by fumigation
- Do the packing for gas sterilization
- Function as the scrubbing and circulating nurse

(d) What communication skills they should have?

- Properly read the details in the medical record and check the identity of the patient ,the investigations done and the results
- Communicate clearly to the patient for history taking and record the findings properly
- Explain clearly to the patient , the details given in the medical prescription
- Give adequate information about the various diseases

- Effectively counsel the importance of follow- up and review
- Explain the after effects of an eye drop/ointment before administering
- Explain clearly the procedures or investigations to be done
- Explain clearly the types of lenses and frames and their uses
- Give clear instructions about the use of spectacles, contact lenses and low vision aids
- Give apt answers to patients' queries

B. TRAINING MODALITY

1st Year - Theory , Practical and Log Book
 2nd Year - Theory, Practical and Log Book

C. BASIC SUBJECTS

FIRST YEAR	
Paper I	<ul style="list-style-type: none"> • Ocular Anatomy, • Ocular Physiology, • Ocular Pharmacology, • Ocular Microbiology & clinical pathology
Paper II	<ul style="list-style-type: none"> • Ocular diseases I, • OPD procedures I • In-patient procedures I • Community ophthalmology, • Medical records
SECOND YEAR	
Paper I	<ul style="list-style-type: none"> • Ocular diseases II, • Basic nursing care • Inpatient procedure II
Paper II	<ul style="list-style-type: none"> • Ophthalmic surgical procedures, • OPD procedures II • Ocular injuries and emergencies

D. EXAMINATION PATTERN

1st year – Internal Assessment (Half Yearly), Theory, Practical
 2nd year – Internal Assessment (Half Yearly), Theory, Practical & Viva by External

FIRST YEAR

Paper	Subject Title	Internal Assessment Theory (20), Practical (20), Log Book (10)		Board Exam – Theory	
		FM	Pass Mark	FM	Pass Mark
Paper I	Ocular Anatomy, Ocular Physiology, Ocular Pharmacology & Clinical Pathology	50	25	100	50
Paper II	Ocular diseases I, OPD procedures I Inpatient procedure I Community Ophthalmology, Medical records	50	25	100	50

SECOND YEAR

Paper	Subject Title	Internal Assessment Theory (20), Practical (20), Log Book (10)		Board Exam – Theory		Board Exam – Practical		Board Exam – Viva	
		FM	Pass Mark	FM	Pass Mark	FM	Pass Mark	FM	Pass Mark
Paper I	Ocular diseases II, Basic Nursing Care, Inpatient procedure II	50	25	100	50	50	25	50	25
Paper II	Ophthalmic Surgical procedures, OPD procedures II Ocular Injuries and Emergencies	50	25	100	50				

EXAMINATION PATTERN FOR OPHTHALMIC NURSING ASSISTANT PROGRAMME (One year)

Paper	Subject Title	Internal Assessment Theory (20), Practical (20), Log Book (10)		Final Exam – Theory		Board Exam – Practical	
		FM	Pass Mark	FM	Pass Mark	FM	Pass Mark
Paper I	Ocular diseases I & II, Basic Nursing Care, OPD procedures I Inpatient procedures I	50	25	100	50	100	50
Paper II	Ophthalmic Surgical procedures, OPD procedures II Inpatient procedures II Ocular Injuries and Emergencies	50	25	100	50	Nil	Nil

E. DETAIL SYLLABI**FIRST YEAR****Paper I**

(Ocular Anatomy, Ocular Physiology, Ocular Pharmacology, Ocular Microbiology & clinical pathology)

Hours: 60

Max: 100
(Each unit 20 marks)

Objectives :

The trainee will be able to

1. Understand the anatomy of the different parts of the eye and the diseases affecting them
2. Understand the physiological activities of the different parts of the eye and how to assess them
3. Identify the different ocular medicines and understand their uses and method of application
4. Know the various microorganisms causing infection and the types of infection caused
5. Understand the different infection control methods and principles of asepsis ad sterilization

UNIT I: Ocular anatomy I

Specific objectives:

- To have a knowledge of ocular anatomy
- To understand the various structures in the eye
- Common diseases affecting them

Gross anatomy of the eyeball – the bony orbit- the conjunctiva, — the extra ocular muscles – the eyelids – the lacrimal apparatus — blood supply of the eye – nerve supply of the eye.

UNIT II: Ocular anatomy II

Specific objectives:

- To have a knowledge of ocular anatomy
- To understand the various structures in the eye
- Common diseases affecting them

The sclera -the cornea- the limbus – chambers of the eye - angle of the anterior chamber – the iris and pupil- the crystalline lens - Ciliary body – the choroid -Vitreous - the retina - Optic Nerve – Visual pathway

UNIT III: Ocular Physiology:

Specific objectives:

- To know the basics of ocular physiology
- To understand the function of various structures in the eye.
- Common tests to assess the ocular functions

General Physiology of eye - visual perceptions -assessment of visual acuity- The cornea – the lens – tears –the Schirmer’s test- the aqueous humor – measurement of IOP —colour vision – the visual pathway – pupillary pathways and reflexes -accommodation - ocular movements - binocular single vision

UNIT IV: Ocular Pharmacology

Specific objectives:

- To know about the ophthalmic medications
- To know the actions and adverse effects of drugs.
- To monitor the patients after the administration of drugs

Drug delivery system – astringents and decongestants – antibiotics – antivirals – antifungals – autonomic drugs – mydriatics and cycloplegics – local anesthetics – ocular hypotensives – corticosteroids – non steroidal anti-inflammatory drugs – viscoelastic substances – ocular reactions to systemic medications –preservatives in eye drops – systemic drugs used in Ophthalmology.

UNIT V: Ocular Microbiology & Clinical pathology

Specific objectives:

- To discuss the characteristics of microorganisms including bacterial, viral and fungal infections.
- To discuss the measures to control the spread of micro organisms
- Introduction to various micro organisms – bacteria, Fungi, Virus, Parasites.

Bacteria- classification of bacteria- Gram positive and negative cocci- Gram positive and negative bacilli –fungi – viruses – parasites - smear preparation – gram- staining procedure – sterilization, disinfection and antisepsis - dry heat – moist heat – autoclave - gas sterilization - chemical sterilization – important principles of asepsis.

Blood and its components, Estimation of blood sugar/ Albumin, Examination of Urine

FIRST YEAR

Paper II

(Ocular Diseases I, Outpatient Procedures I, In-patient Procedures I, Community Ophthalmology, Medical Records)

Hours: 80

Max: 100
(Each unit 20 marks)

General objectives

- To have knowledge of the various ocular diseases and disorders.
- To know about the signs and symptoms of various ocular diseases.
- To understand the various refractive errors
- To know the various treatment modalities
- To understand the common outpatient(OP) procedures
- To learn how to assist the surgeons in OP Procedures
- To understand the basics of medical records
- To know the basics of community ophthalmology

Unit I: Diseases of the eyelid, conjunctiva and diseases of the lacrimal apparatus

Specific objectives:

- To discuss the various diseases and disorders of the lid and conjunctiva

- To know about the signs and symptoms of various diseases and disorders of the lid and conjunctiva
- To know the various treatment modalities

Lids :Entropion– ectropion – trichiasis – ptosis – blepharitis –hordeolum – chalazion – important tumors

Lacrimal apparatus: Diseases of the lacrimal gland – the dry eye syndrome – watering from the eye –dacryocystitis

Conjunctiva: Different types of conjunctivitis – trachoma – Pterygium – Pingaecula – Bitot’s spots

Unit II: Diseases of the cornea and lens

Specific objectives:

- To discuss the various diseases and disorders of the cornea and , lens
- To know about the signs and symptoms of various diseases and disorders of the cornea and lens
- To know the various treatment modalities

Cornea : Inflammation of the cornea – bacterial keratitis – mycotic keratitis – fungal keratitis - viral keratitis – peripheral keratitis – interstitial keratitis – corneal dystrophies- scleritis–Episcleritis

Lens: Cataract – subluxation of the lens – dislocation of the lens – Management of cataract – Intraocular lenses – Posterior capsular opacification

Unit III: Out-patient procedures I

Specific objectives

- To know the basic functions of outpatient department To understand the preliminary examinations done in OPD

Orientation to out-patient services: patient reception – instrument, equipment and supplies - communication with patients – departmental structure and function

Fundamentals of outpatient services: History taking – external examination of the eye –visual acuity– measuring intraocular pressure – evaluation of the patency of lacrimal drainage apparatus

Management strategies in out-patient services: public relations- Patient care and patient satisfaction – patient counselling

Unit IV: In-patient procedures I

Specific objectives:

- To know about the ward practices
- To discuss pre and post operative care given to to the respective patients
- To mangle various kind of situations in the health care

In patient services: Differences between eye-ward and general ward – location and working environment in ward – instruments and equipments in ward

Admission and Discharge of Patients: Admission procedure- arrangement of patient's room, bed making, housekeeping- discharge procedure

Preoperative Ophthalmic Care: Preoperative evaluation – preoperative preparation and instructions – day care surgery procedure- biometry-

Postoperative ophthalmic care: Preparation of dressing – assisting doctors in ward rounds –identification and management of post operative complications – night duty- post operative patient counselling

Unit V. Community ophthalmology and medical records

Community ophthalmology

Specific objectives:

- To understand the different categories of visual impairment
- To understand the different methods of intervention
- To appreciate the need for eye donation
- To know the basics of organizing eye camps

Blindness – categories of visual impairment –Magnitude – Various diseases causing blindness - methods of intervention –nutritional blindness - National program for control of blindness - vision 2020 – the right to sight initiative – human resource development – role of camps in blindness prevention- role of eye banks in blindness prevention.

Planning and organisation of School sight programme and community eye care programmes

Medical records:

Specific objectives :

- To know the use and importance of medical records
- To be familiar with different types of medical records
- To understand the filing methods and preservation of medical records

Introduction to Medical Records; - use and value of for medical record - content of medical records-out patient record, inpatient admission record- filing methods– preservation of medical records- medical record retention policy

Communication skills

Essentials of good communication– barriers of communication – overcoming communication barriers – principles of communication -7cs- types of communication

Oral communication

Importance of speaking efficiently –voice culture - preparation of speech - secrets of good delivery – audience psychology – presentation skills –non-verbal communication – interview techniques – skill in arguing

Spoken English & reading

The phonetic symbols- using the dictionary for learning to pronounce – explaining clearly, defining and giving reasons, explaining differences – efficient and fast reading – reading purposefully – understanding what is read – drawing conclusion – improving speed – improving concentration

Written communication

Rules for effective writing – précis writing - letter writing – writing curriculum vitae – placing an order – preparing a good report – note taking – reporting what happened from notes

SECOND YEAR

Paper I

(Ocular Diseases II, Basic nursing Care, In -Patient Procedures II)

Hours: 80

Max: 100
(Each unit carries 20 marks)

General objectives

- Knowledge of the various ocular diseases and disorders affecting the posterior segment, glaucoma, visual pathway, orbit and the various nerves supplying the ocular structures.
- To know about the signs and symptoms of various ocular diseases.
- To know the various treatment modalities
- To understand management of inpatients and related problems

Unit I : Diseases of the uvea and various glaucomas

Specific objectives:

- To discuss the various diseases and disorders of the uvea
- To know about the signs and symptoms of various diseases and disorders of the uvea
- To know the signs and symptoms of different types of glaucoma
- To know the various treatment modalities

Uvea: Anterior uveitis – parsplanitis – posterior uveitis – AIDS – endophthalmitis-panophthalmitis **Glaucoma:** Intraocular pressure – congenital glaucoma – primary angle closure glaucoma – primary open-angle glaucoma – lens induced glaucomas - secondary glaucomas

UNIT II : Diseases of retina & vitreous

Specific objectives:

- To discuss the various diseases and disorders of the retina, vitreous and optic nerve
- To know about the signs and symptoms of various diseases and disorders of the retina and opticnerve
- To know the various treatment modalities

Retina: Vascular disorders – age-related macular degeneration – retinitis pigmentosa – retinal detachment – hypertensive retinopathy – diabetic retinopathy - treatment **Vitreous:** vitreous opacities – vitreous haemorrhage – vitrectomy

UNIT III : Neuro ophthalmology, Intraocular tumors, diseases of the orbit ,

Specific objectives:

- To discuss the various diseases and disorders of the orbit and lacrimal apparatus
- To know about the signs and symptoms of various diseases and disorders of the orbit and lacrimal apparatus
- To discuss the various types of intraocular tumors
- To know the various treatment modalities

Tumours: Leucocoria in children - retinoblastoma- melanoma of the choroid

Orbit:Proptosis - orbital inflammation – thyroid ophthalmopathy – optic nerve

tumours - Injuries

Neuro ophthalmology: optic neuritis – Papilloedema – optic atrophy – common diseases affecting chiasma – visual pathway - Occipital cortex – common diseases affecting oculomotor nerve, Trochlear nerve, Trigeminal nerve, Abducent nerve and facial nerve.

UNIT IV : Basic Nursing Care

Specific objectives:

- To know about the ward practices.
- To discuss pre and postoperative care given to the respective patients.
- To manage various kind of situations in the health care

In patient services: Differences between eye-ward and general ward – location and working environment in ward – instruments and equipments in ward.

Needs of patients and principles of nursing care: Basic nursing principles- safe and healthy environment - care of equipment — personal care of the patient – nutrition needs of the patient – assessment of general condition – recording of pulse – Blood pressure – Respiration rate – ECG - height – weight etc.

UNIT V : In-patient Procedures II

Specific objectives:

- To know about the ward practices.
- To discuss pre and postoperative care given to the respective patients.
- To manage various kind of situations in the health care

Postoperative ophthalmic nursing care: Preparation of dressing – assisting doctors in ward rounds – Identification and management of postoperative complications – night duty – postoperative patient counselling

Ophthalmic sub specialty nursing care – glaucoma – retina, cornea- orbit – paediatric cases

Managing systemic conditions: asthma- diabetes mellitus - hypertension – Ischaemic cardiac ailments – shock

Management of systemic emergencies: Equipments and structure of ICU - acute myocardial infarction – cardiac arrest – Status asthmaticus - hypoglycemia – seizures – acute pulmonary edema – shock

SECOND YEAR

Paper II

Ophthalmic surgical procedures, OPD procedure II, Ocular injuries and emergencies

Hours: 80

Max: 100
(Each unit carries 20 marks)

General objectives:

- To understand the various ocular surgeries and related complications
- To understand the various OP procedures
- To learn how to assist the surgeons in the operating room and in OP procedures.

OPHTHALMIC SURGICAL PROCEDURES

Specific objectives:

- To know about do's and don'ts in the OT including aseptic techniques
- To know sterilization, disinfection and microbiological surveillance of OT.
- To understand the various steps of surgical procedures and assisting for various surgical procedures

UNIT I: Surgical procedures I

Orientation to Operation Theatre: To understand – orientation to septic operation theatre location– dress code – operation theatre discipline- aseptic theatre

Disinfection and sterilization procedures : instrument cleaning and packing for sterilization– methods of sterilization – sterilization of phaco emulsification instruments – maintenance of sterility – control of air-borne infection – decontamination process –scrubbing, gowning and gloving methods – operation theatre cleaning – infection control: sources of infection- infection - control programme–segregation and methods of waste disposal– bio-waste management

UNIT II :Surgical procedures II

Instrument and equipment maintenance:Electrical connections – microscopes – phaco machine – surgical instruments

Role of Scrub Nurse:Setting up of trolley for various surgeries,-Identification of the Instruments and its use -draping the patient -handling of instruments, management of

intra operative complication, Anterior vitrectomy, management of infected cases, Instruments for different surgeries

Ocular anesthesia – drugs, purpose, procedure, contra indications-complications of retro bulbar anesthesia –facial nerve block - topical anesthesia,-general emergency in operation theatre

General anesthesia -Introduction about general anesthesia -purpose of general anesthesia, indication of general anesthesia , pre-operative preparation- history ,investigation- equipment used for general anesthesia-patient counseling, pre-operative case sheet checking -assisting doctors

Basic knowledge of sutures, needles and lenses: - sutures and needles – intraocular lenses

UNIT III Surgical procedures III

Role of ophthalmic assistant in cataract surgery: Cataract – pre-operative evaluation – types of surgery – steps of surgery – assisting - instrument s required – cataract surgery complications

Role of ophthalmic assistant in assisting specialty surgeries: Lacrimal sac surgeries – (DCR, DCT) – Glaucoma surgeries, Trabeculectomy, Trabeculectomy with ECCE), Keratoplasty, Orbital surgeries – assisting

UNIT IV: Outpatient Procedures II

Specific objectives:

- To know various diagnostic procedures conducted in the OPD.
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- To discuss treatment modalities and management procedures for different ocular conditions.
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- To know how to assist surgeons in various investigations and procedures

Out-patient services

Laser in ophthalmology – fundus fluorescein angiography - ultrasonography in ophthalmology – ultrasound bio microscopy - corneal topography – optical coherence tomography

Assisting in special procedures: corneal scraping – fundus fluorescein angiography – ultrasonography –corneal topography - assisting in incision and drainage of abscesses - assisting in fitting a prosthetic eye – laser capsulotomy – NdYag peripheral iridotomy

UNIT V: Ocular injuries and ocular emergencies

Specific objectives:

- To know about the emergency care
- To identify the ophthalmic emergencies
- To identify different types of injuries
- To give timely intervention and care

Ocular injuries: Chemical injuries (Acid, Alkali) -Penetrating injury / perforating injury,- foreign body - blunt injuries-

Ocular emergencies: Corneal emergencies - postoperative emergencies – Endophthalmitis-retinal emergencies – traumatic optic neuropathy-acute congestive glaucoma – immediate treatment measures-

F. SUGGESTED MODE OF TEACHING AND EXAMINATION FOR ALL COURSES

Suggested modes of teaching

- Lectures
- Skill sessions
- Hands-on practice
- Power point presentations
- Assignments

Suggested activities for Evaluation

- Written examinations
- Skill assessment
- Viva examinations
- Seminar by the students

Skill development

Ward

- Aseptic Technique
- Reading& understanding a medical record
- Assessment of blood glucose
- Temperature
- Pulse & Respiration
- Blood Pressure
- Trolley set up: (Cataract, Glaucoma & corneal ulcer)
- Bandage Tying & Untying
- Case presentation of post -operative patients
- Dressing preparation

OP

- Tonometer : Cleaning and Sterilization
- Measurement of IOP using Schiottz tonometer
- Measurement of vital signs
- Testing Lacrimal Duct Patency
- Urine Test
- Handling the Glucometer & Strip position checking
- Bandage tying and untying
- Dressing preparation
- Checking Visual acuity

- Field testing
- ECG Recording

OT

- Aseptic techniques
- Trolley set up (Cataract & glaucoma)
- Draping the patient and application of speculum & Bridle sutures
- Cleaning and Sterilization of instruments
- Utilization of sterile items (Medicine, IOL, suture)
- Assisting the doctors in various surgeries and OP procedures

Internal assessment:

- Theory (20)
- Log Book (10)
- Practical (20)

G. REFERENCE BOOKS

- **Samar K. Basak, Essentials of ophthalmology , Current Books International,5th edition**
- **A. Samuel Gnanadoss, Ophthalmic Nursing, JAYPEE,**
- **Handbook for clinical ophthalmic assistants,Aravind eye care system**
- **Hand book for surgical ophthalmic assistant, Aravind eye care system**
- **Introduction to basics in ophthalmic assisting, Aravind eye care system**
- **Ophthalmic Nursing Manual, Aravind eye care system**
