

THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY

No. 69, ANNA SALAI, GUINDY, CHENNAI – 600 032.

POST GRADUATE DIPLOMA COURSES



SYLLABUS AND CURRICULUM

2021 - 2022

**DIPLOMA IN OTO-RHINO
LARYNGOLOGY(D.L.O)**

THE TAMIL NADU Dr. M.G.R MEDICAL UNIVERSITY, CHENNAI

DIPLOMA IN OTO-RHINO LARYNGOLOGY(D.L.O)

OTORHINOLARYNGOLOGY has undergone a major transformation in the past decade, the branch of surgery which initially comprised ENT head and neck surgery has acquired a totally new field in skull base surgery. There have been many advances in endoscopic surgery of the head and neck also. In tune with the continuing changes and the need for the students to update to the emerging new fields in otorhinolaryngology, the curriculum has been devised to acquire the new status

1 GOAL

The aim of this curriculum is to create a cadre of medical professionals who are well groomed to meet the challenges in the frontier of newer techniques and treatment in the emerging world of medicine and surgery.

- 1.** This curriculum aims at students to keep abreast with latest in ENT subjects
- 2.** Provide comprehensive diagnostic and therapeutic and surgical options and preventive ENT even in rural areas
- 3.** Carry out research activities in emerging fields of ENT
- 4.** To be a complete ENT surgeon by preventing ,diagnosing and treating ENT disease in the community and implement various health care programmes for the society

2 OBJECTIVES:

a) Knowledge

The post graduate students have to acquire the knowledge of anatomy physiology and pathological changes in ENT diseases and , identify the manifestations due to diseases and plan the management and care of the patients.

b) Attitude

Through the training program the student should develop a positive attitude and empathy towards the patient.

c) Skills

The student should develop skills of comprehending ENT diseases in the society and know their pathophysiology and devise intervention both medically and surgically and also to prevent diseases. They are also required to have good communication skills and treat patient with empathy. In this perspective they are to acquire sufficient knowledge of theoretical practical research avenues for implementing preventive programmes in the society

3 COMPONENTS OF THE POSTGRADUATE CURRICULUM

THEORETICAL KNOWLEDGE

- a. Basic sciences: it is required out of student to acquire knowledge of anatomy physiology and mechanism of disease progression
- b. Clinical ENT : Knowledge of various ENT diseases and their related systemic connections should be studied
- c. diagnostic procedures: knowledge of the various methods to identify and conclude regarding ENT diseases should be well studied
- d. practical cadaveric and surgical skills should be obtained by constant practice and their skills should be evaluated
- e. research activities should be learnt in such a way that they study the ENT illness both perspectively and elaborately.
- f. preventive ENT should be learnt with emphasis on hearing and anticancer studies.

- PRACTICAL AND CLINICAL SKILLS

- ❖ PRACTICAL SKILLS DIAGNOSTIC PROCEDURES

- 1. Cadaver FESS dissection
- 2. Temporal bone dissection
- 3. Larynx dissection
- 4. Neck dissection

❖ THERAPEUTIC PROCEDURES

- 1) Tracheostomy
- 2) Nasogastric tube insertion
- 3) Grommet insertion
- 4) Nasal packing
- 5) Antral lavage

❖ CLINICAL SKILLS

1. History taking and physical Examination
2. Functional assessment of hearing
equilibrium, voice, smell, taste, airway for OSAS
3. Reading Audiogram, OAE, BERA, HIT assessment,
speech assessment, rhinomanometry, smell and
taste assessment, radiology of ENT
4. Radiotherapy techniques
5. Chemotherapy techniques

• WRITING THESIS/ RESEARCH ARTICLES

All students will have to carry out a research program and bring out a Research paper

Students are encouraged to attend CME's, publish research papers and present posters or platform presentations at State, National and International conferences.

❖ ATTITUDES INCLUDING COMMUNICATION SKILLS

Student should develop the art of eliciting the maximum information from patients in a given time considering the sensory deficits of the patient and caregivers. Communication skills can be learnt through observation and from formal communication skills training and workshops. Students have to develop patience and empathy in dealing with patients. They have to learn to show sensitivity to their special needs.

A) TRAINING IN RESEARCH METHODOLOGY MEDICAL ETHICS, BIO ETHICS AND MEDICOLEGAL ASPECTS

- Students are encouraged to attend workshops/CME's on Bioethics conducted by the University and other reputed Institutions.
- Medical ethics, Bioethics, moral and legal issues, medical Audit are part and parcel of the curriculum and syllabus

4. THEORY SYLLABUS

Applied Basic Sciences

Anatomy, Physiology, Biochemistry, Pathology and Bacteriology related to E.N.T. Speciality:

Anatomy:

- Pre-natal and Post-natal development of the ear:
 - 1) Internal ear –bony labyrinth and the membranous labyrinth
- Cochleo vestibular development and malformations
 - 2) Middle Ear cleft– Middle ear folds and ossicles
 - Air spaces and lining membrane
 - Eustachian tube and mastoid development theories
 - 3) External Ear - development of pinna & external auditory canal

Pneumatisation of the Mastoid Process ; development theories

- Anatomy of temporal bone:
 - Microscopic anatomy
 - Endoscopic anatomy
 - Squamous Portion
 - Mastoid Portion
 - Petrous Portion
 - Tympanic Portion

- Anatomy of the ear:

External ear	Microscopic anatomy
Middle ear	Endoscopic anatomy
Internal ear	

- Anatomy of cranial nerves:
with particular reference to facial and auditory nerves
- Osteology of the cranial bones:
Venous
sinuses

The brain

Anatomy of nose and paranasal sinuses:

Prenatal and post – natal development

The external nose - development

The nasal cavity – Lateral, Medial walls, choana & roof and
floor of nasal_cavity

The paranasal sinuses – Development of sinuses & endoscopic
anatomy of nose & PNS

Nasal Mucous membrane

Blood supply and nerve supply

Anatomy of the Pharynx and Nose:

Development of Pharynx 1. nasopharynx

2. Oropharynx

3. Hypopharynx

The tonsils / Waldeyer's ring

Parapharyngeal space & its structures

Functions

Anatomy of the larynx:

Prenatal and postnatal development of the larynx, Difference between child and adult larynx Muscles and cartilages of larynx (external & internal muscles, ligaments spaces in larynx.

Anatomy of trachea, bronchi and Oesophagus, The long and Broncho-pulmonary, segments The Mediastinum

The visceral arches, their derivatives, developmental defects Development of face

ANATOMY OF SKULL BASE – ANTERIOR, LATERAL & POSTERIOR
SKULL BASE.

Bacteriology Syllabus

- 1.** Elementary Bacteriology pertaining to:
 - a.** *Corynebacterium diphtheriae*
 - b.** Staphylo, Strepto, Pneumo, *Pseudomonas*, H.influenza
 - c.** *Neisseria* group
 - d.** *Proteus* group
 - e.** Vincents and *Fusiform Bacillus*
 - f.** *Mycobacterium tuberculosis*, *M. leprae*
- 2.** Fungus: *Aspergillus* group, *Mucor*, *Rhizopus*
- 3.** Viruses: Adeno virus, Coxsackie, RSV, E B Virus, HIV, H1N1 virus RHINO Virus, MUMPS, MEASLES
- 4.** Rhinosporidiosis
- 5.** Immunology – Surgical Immunology & allergy

Biochemistry syllabus:

- Biochemistry of body fluids and C.S.F
- Electrolyte balance and maintenance of PH of Blood
- Biochemical changes in upper airway obstruction and after tracheostomy.
- Biochemistry of labyrinthine fluids and its variations in diseases.

Pharmacology syllabus:

- Pharmacology of sympathomimetic and their uses in Otolaryngology
- Local anaesthetics and analgesics : Merits and Demerits
- Chemotherapy of malignant conditions
- Cortico Steroids and its usage in Otolaryngology
- Antibiotics – recent trends
- Anti Emetics & Labyrinthine Sedatives
- Topical steroids

Pathology Syllabus:

General Pathology – Inflammations, Necrosis, Gangrene Repair of wounds.

Shock – Pathology

Coagulation

Granuloma including midline

granulomas

Thrombosis and Embolism

Tumors – Aetiology, Classification, Pathology & Histopathology

Fungal infections

Bleeding Disorders

Special Pathology:

Surgical pathology of Mouth, Jaw, Neck Salivary glands and Oesophagus.

Ear:

Pathology of the external ear.

Histopathology of the drum membrane

Inflammations of the middle ear

Inflammation of Mastoid

Inflammaion of the Petross

Histopathology of the inner ear: Vestibular Schwannoma

Tuberculosis of ear

Chronic inflammatory changes in the temporal bone

Neoplasms of the ear

Nose:

Pathology of the Nose.

Chronic specific infections of the Nose and accessory sinuses (Pre Nasal).

Cysts and tumours of the nose and accessory sinuses.

Pharynx and Larynx:

Oral and Pharyngeal pathology as manifestations of constitutional Diseases, Pathology of the Nasopharynx, larynx. Swellings of the neck.

Diseases of skull base

Clinical Pathology in its relationship to otolaryngology.

Physiology Syllabus:

Regulation of water balance and composition of body fluids by the kidney.

Coagulation of blood.

Physiology of special senses:

Taste.

Smell.

Heat.

Physiology of respiration including its mechanism and regulation. Physiology of deglutition.

Maintenance of balance of body. Physiology of nose and paranasal sinuses. Carriage of Oxygen by the blood. Carbondioxide transport in the body.

Audiology syllabus:

Physiology of hearing and balance:

Hearing including physics of sound. Sound production.

Physics of sound. The vibration. The decibel.

Sound Stimuli and its Wave motion in a material medium. Propagation. Complex sound various and phase difference. Sound conduction.

Vestibular function and balance. Semicircular canals. The otolith organs.
Otoacoustic Emissions

5. TEACHING LEARNING METHODS

The following teaching learning methods are recommended.

Lectures

Case based discussion

Bed side clinics

Teaching on ward rounds

Symposia

Seminars

Journal clubs

Problem based learning

Telemedicine

Practical Skills

1. Cadaver Dissection of Ear, Nose and Larynx
2. Diagnostic Endoscopy
3. Microscopic Examination
4. Surgical Techniques

6. STRUCTURED TRAINING PROGRAM

I Year- ENT Department

II Year

- ENT Department -9months

Special Postings:

- General surgery-one month
- Audiology - 15 days
- Anesthesia - 15 days
- Radiotherapy - 15 days
- Pediatrics - 15 days

7. Evaluation of the candidates in both theory and practical aspects will help the candidate in improvement of his/her knowledge, skills and attitude.

8. COMPETENCY ASSESSMENT:

• OVERALL:		
a) Communication / commitment / Contribution / Compassion towards patients and Innovation	() ()	- 5 Marks
b) Implementation of newly learnt techniques/skills	()	
• Number of cases presented in Clinical Meetings/ Journal clubs/seminars		- 5 marks
• Number of Posters/Papers presented in Conferences/ Publications and Research Projects		- 5 marks
• No. of Medals / Certificates won in the conference / Quiz competitions and other academic meetings with details.		- 5 marks
	Total	----- 20 Marks -----

PG CLINICAL COURSES

VIVA including Competency Assessment	- 80 Marks (60 + 20)
Log Book	- 20 marks

ASSESSMENT SCHEDULE IS AS FOLLOWS

Year of study	Period				Total Max.20 marks
I year	Upto Dec	10 marks	Upto June	10 marks	20 Marks
II year	Upto Dec	10 marks	Upto June	10 marks	20 Marks
	AVERAGE				20 Marks

9.PUBLICATION IN UNIVERSITY JOURNAL OF MEDICAL SCIENCES:

Regarding submission of articles to the University Journal of Medical Sciences for all the PG Degree/Diploma courses, it is mandatory that the students have to submit at-least one research paper. Case Reports are not considered as Research Paper

10. THEORY EXAMINATION

Paper I: Basic Sciences in relation to ENT

Paper II: Oto-rhinolaryngology including Audiology and Neuro-otology

Paper III: Oto-rhinolaryngology including Head and Neck Oncology and Endoscopy

Question Paper Pattern: (Paper I, II & III)

I .Elaborate on: 2 X 15 = 30 marks

II. Write notes on: 10 X 7 = 70 marks

Total: 100marks

11. CLINICAL EXAMINATION

Particulars.	Maximum Marks.
Clinical Long Case 1 X 80 = 80 marks Short case 2 X 35 = 70 marks	150
OSCE – 5 stations x 5 marks	25
Ward Rounds/Spotters - 5 X 5 marks	25
Viva-Voce	80
Log Book	20
Total	300
Minimum for Pass	150

12. LOG BOOK

The post graduate students shall maintain a record(log)book of the work carried out by them and the training program undergone during the period of training.

Periodic review of Log book have to be done in the Department by guide / HOD once in every 6 months

13. VIVA including Competency Assessment

VIVA including Competency Assessment - 80 Marks (60 + 20)

14.OSCE (Objective Structural Clinical Examination)

Based on Objective Structured Exam Stations:

S.No.	Stations	Marks
1.	Pathology	05
2.	Microbiology	05
3.	Specimen – Dry – 5	05
4.	Speciment – Wet – 5	05
5.	Operative Surgery	05
6.	Instruments – 5	05
7.	X-ray – 5 / Laptop video	05
8.	CT/MRI – 5	05
9.	Audiogram	05
10.	Recent advances in ENT	05

(BERA/OAE/VEMP/CHAMP/ IMPEDENCE)

50

15. RECOMMENDED LIST OF TEXT BOOKS AND JOURNALS

1. Scott Brown's Otolaryngology – Five Volumes
2. Endoscopic sinus surgery by PJ Womald / MV Kirtane
3. Ballenger – Diseases of the Nose, Throat, Ear, Head and Neck
4. Mawson's Diseases of the Ear.
5. Glasscock and Shambaugh – Surgery of the Ear.
6. Learning Ear Surgery by Temporal Bone Dissection by Dr. K.K. Ramalingam and Dr. B. Sreeramoorthy
7. Year Book of Otolaryngolgy, Head and Neck Surgery Edited by Michael M. Paperella and Byron J. Bailey.

8. Tumours of the Head and Neck – Clinical and Pathological Considerations
by John. G. Batsakis.
9. Rob and Smith – Operative Surgery – Three volumes
10. Recent Advances in Otolaryngology.
11. Jacksons Textbook of Broncho – Oesophagology
12. Radiology of Head and Neck by Valvassori
13. Diseases of the facial nerve by Mark May
14. Otolaryngology Neurology by D. Brachmann

** Note : The editions are as applicable and the latest editions shall be the part of the syllabi.

REFERENCES:

Lore's Atlas of Head and Neck Surgery

Microsurgery of the skull base by Ugo Fisch and Douglas Matto.

Text Book of Operative Surgery by Lee.

16. JOURNALS

1. Indian Journal of Otolaryngology
2. Journal of Otolaryngology
3. Laryngoscope
4. Otolaryngology Clinics of North American
5. Annals of Otolaryngology, Rhinology and Laryngology
6. Acta Otolaryngologica
7. Archives of Otolaryngology, Head and Neck Surgery
8. International Journal of Paediatric Otolaryngology
