

# MS OTORHINOLARYGOLOGY (ENT)

## *Syllabus*

### **Course contents:**

1. Anatomy and Physiology of Ear, Nose and Throat, Trachea and esophagus.
2. The generation and reception of speech
3. Radiographic anatomy of the ear, nose, throat and imaging.
4. Bacteriology in relation to Otorhinolaryngology
5. Allergy and rhinitis
6. Haematology in relation to Otolaryngology
7. Anaesthesia for Otolaryngology
8. Pharmacology of drugs used in ENT
9. Electrolyte, fluid balance/shock conditions
10. Use of teaching aids
11. Routine blood, urine testing
12. Preparation of slides
13. Facial nerve stimulation test
14. Audiometric tests like pure tone Audiometry, Impedance Audiometry, Free field Audiometry, Specialized tests of hearing including SISI, Tone decay, ABLB, Speech discrimination score etc.
15. Vestibular tests like caloric testing (Water and Air) stopping test, Fukuda's test,
16. Evoked response audiometry.

### **Ear:**

1. The physical and functional examination of the ear
2. The functional and physical examination of the vestibular system.
3. Tinnitus
4. Affections of external ear
5. Repair of deformities of the external ear.
6. Congenital conditions of the middle ear cleft
7. Traumatic conductive deafness
8. Acute inflammation of the middle ear cleft
9. Non-suppurative otitis media
10. Chronic suppurative otitis media
11. Management of chronic suppurative otitis media
12. Complications of infections of middle ear.
13. Tumors of the middle ear cleft and temporal bone
14. Diseases of the otic capsule-otosclerosis
15. Diseases of the otic capsule-other diseases
16. The deaf child
17. Acoustic neuroma
18. Ototoxicity
19. Presbycusis
20. Diagnosis and management of sudden and fluctuant sensorineural hearing loss
21. Meniere's disease

22. Neurologic aspects of vertigo
23. Facial paralysis
24. Rehabilitation of adults with acquired Hearing loss-Hearing aids
25. The cochlear Implants
26. Nystagmus
27. Otoacoustic emissions

**Nose:**

1. Examination of the nose
2. Conditions of the external nose
3. Injuries of the facial skeleton
4. Congenital diseases of the nose
5. The nasal septum
6. Foreign bodies in the nose, rhinolith
7. Epistaxis
8. Acute chronic inflammations of the nasal cavities
9. Vasomotor rhinitis-allergic and non-allergic
10. Nasal polyposis
11. Abnormalities of smell
12. Acute sinusitis
13. Chronic sinusitis
14. Nasal Allergy/Fungal allergic sinusitis
15. Complications of acute and chronic sinusitis
16. Tumors of nose and sinuses
17. Facial pains
18. Trans-ethmoidal hypophysectomy
19. Functional endoscopic sinus surgery (FESS)

**Throat:**

1. Methods of examination of the mouth and pharynx
2. Diseases of the mouth
3. Diseases of the salivary glands
4. Pharyngeal lesions associated with general diseases
5. Diseases of the tonsils and adenoids (excluding neoplasms)
6. Tumors of the pharynx
7. Hypopharyngeal diverticulum (Pharyngeal Pouch)
8. Methods of examining and larynx and tracheobronchial tree
9. Congenital diseases of the larynx
10. Laryngeal disorders in singers and other voice users
11. Neurological affections of larynx and pharynx
12. Intubation of the larynx, laryngotomy and tracheostomy
13. Cervical node dissection
14. Skin grafts in Otolaryngology and reconstructive methods including regional and distant flaps for repair of defects after excision of tumors or trauma.
15. Micro laryngeal surgery/thyroplasty

**Miscellaneous and head and neck:**

1. Cranial nerves
2. Raised intracranial tension-causes, diagnosis, management with particular reference to otitis hydrocephalus
3. Head injuries and I.C. Haemorrhage
4. Pituitary gland, anatomy, physiology hypo - and hyper - pituitarism, new growths.
5. Intracranial venous sinuses and their affections
5. Osteology: skull, mandible cervical and thoracic vertebral sternum
6. Cervical fascia, facial spaces in neck, retro-pharyngeal and parapharyngeal Abscesses
7. Anatomy and physiology of thyroid gland, goitre, diseases of the thyroid and carcinoma of thyroid
8. Large blood vessels in neck, thoracic duct development of major cervical and thoracic blood vessels.
9. Head and neck reconstructive surgery

**Drugs used in ENT:**

1. Antibiotics Antihistaminic
2. Nasal vasoconstrictors
3. Local anaesthetics
4. Corticosteroids
5. Cyto-toxic agents
6. Antibiotics
7. Radioactive isotopes
8. Antifungal agents
9. Vasopressive and other agents used in shock like states.

**General:**

1. Physiology of circulation, regulation of blood pressure, reactions of body to haemorrhage, patho-physiology of shock, fluid balance, blood transfusion and its hazards, fluid replacement therapy, burns
2. Agents used in shock like states

**Desirable**

1. The ears and nasal sinuses in the aerospace environment
2. Physiological consideration of pressure effects on the ear and sinuses in deep water diving
3. The principles of cancer immunology with particular reference to head and neck cancer
4. Principles of chemotherapy in head and neck cancer
5. Recording of nystagmus by ENG and its interpretation

**Ear:**

1. Traumatic lesions of the inner ear
2. Inflammatory lesions of the vestibular and auditory nerve

3. Vascular lesions of the inner ear
4. Electronystagmography
5. Skull base/Neurologic surgery

**Nose:**

1. Cosmetic surgery of the nose
2. Non-healing granuloma of the nose
3. Surgery of the pterygopalatine fossa
4. LASER Surgery

**Throat:**

1. Oesophageal conditions in the practice of ear, nose and throat surgery
2. Disorders of speech
3. Lower respiratory conditions in Otolaryngology

**Miscellaneous and head and neck**

1. Functional Anatomy of cerebellum and brainstem
2. Anatomy of mediastinum
3. Pleura, plural cavity, broncho-pulmonary segments and their clinical importance
4. Facial plastic surgery

## ***TEACHING AND LEARNING METHODS***

**Teaching methodology**

Didactic lectures are of least importance; small group discussion such as seminars, journal clubs, symposia, reviews and guest lectures should get priority for theoretical knowledge. Bedside teaching, grand rounds, structured interactive group discussions and clinical demonstrations should be the hallmark of clinical/practical learning with appropriate emphasis on e-learning. Student should have hand-on training in performing various procedures and ability to interpret various tests/investigations. Exposure to newer specialized diagnostic/therapeutic procedures concerning her/his subject should be given. Self-learning tools like assignments and case-based learning may be promoted. Exposure to newer specialized diagnostic/therapeutic procedures concerning ENT should be given.

**1. Rotations:**

- A major portion of posting should be in ENT Department. It should include in-patients, out-patients, ICU, trauma, emergency room, specialty clinics including Vertigo Clinic, Rhinology Clinic, Otology Clinic, Cancer Clinic, Cadaveric dissection Lab, Audiology and speech therapy.
- Inter-unit rotation in the department should be done for a period of up to one year.
- Rotation in appropriate related subspecialties for a total period not exceeding 06 months.

**2. Clinical meetings:**

There should be intra- and inter- departmental meetings for discussing the uncommon /interesting cases involving multiple departments.

3. **Log book:** Each student must be asked to present a specified number of cases for clinical discussion, perform procedures/tests/operations/present seminars/review articles from various journals in inter-unit/interdepartmental teaching sessions. They should be entered in a Log Book. The Log books shall be checked and assessed periodically by the faculty members imparting the training.
4. **Thesis writing and research:**  
Thesis writing is compulsory.
5. The postgraduate students shall be required to participate in the teaching and training programme of undergraduate students and interns.
6. A postgraduate student of a postgraduate degree course in broad specialities/super specialities would be required to present one poster presentation, to read one paper at a national/state conference and to present one research paper which should be published/accepted for publication/sent for publication during the period of his postgraduate studies so as to make him eligible to appear at the postgraduate degree examination.
7. The student should know the basic concepts of research methodology, plan a research project, be able to retrieve information from the library. The student should have a basic knowledge of statistics.
8. Department should encourage e-learning activities.

**During the training programme, patient safety is of paramount importance; therefore, skills are to be learnt initially on the models, later to be performed under supervision followed by performing independently; for this purpose, provision of surgical skills laboratories in the medical colleges is mandatory.**

## ***ASSESSMENT***

Assessment should be comprehensive & objective. It should address the stated competencies of the course. The assessment needs to be spread over the duration of the course.

**FORMATIVE ASSESSMENT, i.e., assessment during the training would include:**

**Formative assessment should be continual and should assess medical knowledge, patient care, procedural & academic skills, interpersonal skills, professionalism, self directed learning and ability to practice in the system.**

### **General Principles**

Internal Assessment should be frequent, cover all domains of learning and used to provide feedback to improve learning; it should also cover professionalism and communication skills. The Internal Assessment should be conducted in theory and clinical examination.

**Quarterly assessment during the MS training should be based on following educational activities:**

1. **Journal based / recent advances learning**

2. Patient based /Laboratory or Skill based learning
3. Self directed learning and teaching
4. Departmental and interdepartmental learning activity
5. External and Outreach Activities / CMEs

The student to be assessed periodically as per categories listed in postgraduate student appraisal form (Annexure I).

### **SUMMATIVE ASSESSMENT ie.,at the end of the training**

The summative examination would be carried out as per the Rules given in POSTGRADUATE MEDICAL EDUCATION REGULATIONS, 2000.

#### **The examination will be in three parts:**

##### **1. Thesis**

Every post graduate student shall carry out work on an assigned research project under the guidance of a recognised Post Graduate Teacher, the result of which shall be written up and submitted in the form of a Thesis. Work for writing the Thesis is aimed at contributing to the development of a spirit of enquiry, besides exposing the candidate to the techniques of research, critical analysis, acquaintance with the latest advances in medical science and the manner of identifying and consulting available literature.

Thesis shall be submitted at least six months before the Theory and Clinical / Practical examination. The thesis shall be examined by a minimum of three examiners; one internal and two external examiners, who shall not be the examiners for Theory and Clinical examination. A candidate shall be allowed to appear for the Theory and Practical/Clinical examination only after the acceptance of the Thesis by the examiners.

##### **2. Theory**

The examinations shall be organised on the basis of 'Grading' or 'Marking system' to evaluate and to certify candidate's level of knowledge, skill and competence at the end of the training. Obtaining a minimum of 50% marks in 'Theory' as well as 'Practical' separately shall be mandatory for passing examination as a whole. The examination for MS shall be held at the end of 3rd academic year. An academic term shall mean six month's training period.

Theory shall consist of four papers of 3 hours each.

**Paper I:** Basic Sciences related Otolaryngology

**Paper II:** Principles and Practices of Otolaryngology

**Paper III:** Recent advances in Otolaryngology and Head Neck surgery.

**Paper IV:** General Surgical Principles and Head-Neck Surgery.

##### **3. Clinical / Practical and viva voce Examination**

Clinical examination shall be conducted to test the knowledge, skills, attitude and competence of the post graduate students for undertaking independent work as a specialist/teacher, for which post graduate students shall examine a minimum one long case and two short cases.

The Oral examination shall be thorough and shall aim at assessing the post graduate student's knowledge and competence about the subject, investigative procedures, therapeutic technique and other aspects of the specialty, which form a part of the examination.

Assessment may include Objective Structured Clinical Examination(OSCE).

Oral/Viva-voce examination needs to assess knowledge on X-rays, instrumentation, operative procedures. Due weightage should be given to Log Book Records and day-to-day observation during the training.

### **Recommended Reading:**

#### **Books (latest edition)**

- Scott-Brown's *Otorhinolaryngology and Head and Neck Surgery*
- Cummings *Otolaryngology - Head and Neck Surgery*
- *Otolaryngology, Otology & Neurotology* by Paparella & Micheal
- Glasscock-Shambaugh's *Surgery of the Ear*
- *Essentials of Functional Sinus Surgery* by Heinz Stammberger MD
- *Color Atlas of Head & Neck Surgery* by Jatin P Shah
- *Handbook of Clinical Audiology* by Jack Katz
- Stell & Maran's *Textbook of Head and Neck Surgery and Oncology*

#### **Journals**

03-05 international Journals and 02 national (all indexed) journals

Postgraduate Students Appraisal Form  
Pre / Para /Clinical Disciplines

Name of the Department/Unit :

Name of the PG Student :

Period of Training : FROM.....TO.....

| Sr. No. | PARTICULARS                                          | Not Satisfactory | Satisfactory | More Than Satisfactory | Remarks |
|---------|------------------------------------------------------|------------------|--------------|------------------------|---------|
|         |                                                      | 1 2 3            | 4 5 6        | 7 8 9                  |         |
| 1.      | Journal based / recent advances learning             |                  |              |                        |         |
| 2.      | Patient based /Laboratory or Skill based learning    |                  |              |                        |         |
| 3.      | Self directed learning and teaching                  |                  |              |                        |         |
| 4.      | Departmental and interdepartmental learning activity |                  |              |                        |         |
| 5.      | External and Outreach Activities / CMEs              |                  |              |                        |         |
| 6.      | Thesis / Research work                               |                  |              |                        |         |
| 7.      | Log Book Maintenance                                 |                  |              |                        |         |

Publications Yes/ No

Remarks\* \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\*REMARKS: Any significant positive or negative attributes of a postgraduate student to be mentioned. For score less than 4 in any category, remediation must be suggested. Individual feedback to postgraduate student is strongly recommended.

SIGNATURE OF ASSESSEE                      SIGNATURE OF CONSULTANT                      SIGNATURE OF HOD



