REGULATIONS AND CURRICULUM GOVERNING

MS IN OTORHINOLARYGOLOGY

PROGRAM

(2024-25)

Name of the Constituent Unit/Centre: Yenepoya Medical College

YENEPOYA
Deemed to be University

Deralakatte, Mangalore, Karnataka.

NOTIFICATION FROM THE UNIVERSITY

YENEPOYA
(DEEMED TO BE UNIVERSITY)
Recognized under Sec 3(A) of the UGC Act 1956
Accredited by NAAC with 'A' Grade

NOTIFICATION – 34-ACM/2019 dtd. 20.02.2019

Sub:- Implementation of Competency Based Medical Education PG Curriculum

Ref. : Resolution of the Academic Council at its 34th Meeting held on 08.02.2019 vide Agenda 33

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The Academic Council at its 34th Meeting held on 08.02.2019 and subsequently the 45th meetings of Board of Management held on 09.02.2019 have accepted the proposal for implementation of Competency Based Medical Education (CBME) for the PG Curricula of the following programs as per the MCI Norms.

1. MD in Pathology
2. MD in General Medicine
3. MD in Anaesthesiology
4. MD in Paediatrics
5. MD in Respiratory Medicine
6. MD in Radio-diagnosis
7. MD in Anatomy
8. MD in Physiology
9. MD in Biochemistry
10. MD in Microbiology
11. MD in Pharmacology
12. MD in Forensic Medicine
13. MD in Psychiatry
14. MD in Dermatology
15. MD in Community Medicine
16. MS in General Surgery
17. MS in OBG
18. MS in Otorhinolaryngology
19. MS in Ophthalmology
20. MS in Orthopaedics

This revised curriculum shall come into effect from the academic year 2019-2020 onwards.

REGISTRAR

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MS IN OTORHINOLARYGOLOGY

Preamble:

The purpose of PG education is to create specialists who would provide high quality health care and advance the cause of science through research & training.

The purpose of MS Otorhinolaryngology is to standardize Otorhinolaryngology teaching at Post Graduate level throughout the country so that it will benefit in achieving uniformity in undergraduate teaching as well and resultantly creating competent ENT Surgeons with appropriate expertise.

The purpose of this document is to provide teachers and learners illustrative guidelines to achieve defined outcomes through learning and assessment. This document was prepared by various subject-content specialists. The Reconciliation Board of Academic Committee has attempted to render uniformity without compromise to purpose and content of the document. Compromise in purity of syntax has been made in order to preserve the purpose and content. This has necessitated retention of "domains of learning" under the heading "competencies".

Goal

The goals of postgraduate training course would be to train a MBBS doctor who will:

- Practice efficiently and effectively, backed by scientific knowledge and skill base.
- Exercise a caring attitude and maintain high ethical standards.
- Continue to evince keen interest in continuing education in the speciality irrespective of whether he is in a teaching institution or is a practicing surgeon.
- Be a motivated 'teacher' – defined as a specialist keen to share his knowledge and skills with a colleague or a junior or any learner.

SUBJECT SPECIFIC LEARNING OBJECTIVES

At the end of postgraduate training the student should be able to:

1. Practice his specialty ethically keeping in mind the requirement of the patient, community and people at large.
2. Demonstrate sufficient understanding of basic sciences related to his specialty and be able to integrate such knowledge in his clinical practice.
3. Diagnose and manage majority of conditions in his specialty (clinically and with the help of relevant investigations)
4. Plan and advice measures for the promotive, preventive, curative and rehabilitative aspects of health and diseases in the specialty of ENT.
5. Should be able to demonstrate his cognitive skills in the field of ENT and its ancillary branches during the formative and summative evaluation processes.
6. Play the assigned role in the implementation of National Health Programs
7. Demonstrate competence in basic concepts of research methodology and writing thesis and research papers.
8. Develop good learning, communication and teaching skills.
9. Demonstrate sufficient understanding of basic sciences and the clinical applications related to the specialty to be able to integrate this knowledge into clinical practice. Acquire in-depth knowledge in the subject including recent advances.
10. Demonstrate that he is fully conversant with the latest diagnostics & therapeutics available.

1. **Theoretical Knowledge:**

   A student should have fair knowledge of basic sciences (Anatomy, Physiology, Biochemistry, Microbiology, Pathology and Pharmacology) as applied to ENT and be able to integrate such knowledge in his clinical practice. She/He should acquire in-depth knowledge of his subject including recent advances. She/He should be fully conversant with the bedside procedures (diagnostic and therapeutic) and having knowledge of latest diagnostics and therapeutics available.

2. **Clinical / Practical skills:**

   A student should be adept at good history taking, physical examination, providing basic life support and advanced cardiac life support, common procedures like FNAC, Biopsy, aspiration from serous cavities, lumber puncture etc. She/he should be able to choose the required investigations appropriate for patient care , develop the attitude, communication skills, including dealing with patient's relatives with the required empathy, adapt to changing trends in education, learning methods and evolving new diagnostic and therapeutic techniques in the subject of ENT.

3. **Research:**

   She/he should know the basic concepts of research methodology, plan a research project, plan and write a thesis and should know how to use library facilities. Basic knowledge of statistics is also required. Knowledge about use of internet resources is required.

4. **Teaching:**

   The student should learn the basic methodology of teaching and assessment and develop competence in teaching medical/paramedical students and their assessment.

SUBJECT SPECIFIC COMPETENCIES

1. **Cognitive Domain**

   At the end of training, the student should be able to demonstrate ability to practically apply knowledge gained during training period. This would include the following:

Basic Sciences related to Otolaryngology

- Physiology- Mechanism of perception of smell and taste, mechanism of breathing and voice production, lacrimation, deglutition and salivation. Functional tests of the nose and paranasal sinuses, mechanism of cough and sneezing.
- Physics of sound, theories of hearing, mechanism of perception of sound and speech production, physiology of equilibrium and cerebral function. Physiology of brain in connection with hearing, speech, smell and phonation. Audiologic tests like audiometry, impedance, evoked potentials, OAE, Speech audiometry.
- Physiology of larynx, tracheobronchial tree and oesophagus - Histology of mucous membranes, internal ear and other associated organs and structures, nose, PNS, Nasopharynx, Larynx, Tracheo-Bronchial tree, Lymphoepithetical system. Mechanism of immune system/immunology and genetics.
- Anatomy-Embryogenesis of ear, nose and throat including palate and the larynx, Oesophagus, trachea and lungs, tongue, salivary glands, Head and Neck and skull base etc.
- Parapharyngeal spaces in the neck including connective tissue barriers of larynx.
- Applied anatomy of the skull bones, accessory sinuses, external, middle and inner ears, nose, PNS, nasopharynx, meninges, brain, pharynx, larynx, trachea and bronchi, lungs, pleurae, oesophagus and the mediastinum.
- Anatomy of all cranial nerves with their functions.

Principles and Practices of Otolaryngology, Audiology and Speech Pathology

- Clinical Methodology as applied to ORL HN diseases in adult and children and the accessory sinuses, diagnosis and surgical treatment of diseases of nose, throat and ear in adult and children. Prevention and treatment, infectious diseases of Otolaryngology and Head Neck region. Circulatory and nervous disturbances of the nose, throat and ear and their effects on other organs of the body. Deformities, injuries sinus infections, polyps and the tumors of the nose, and paranasal sinuses.
- Examination of the ear, deafness and allied diseases, complications of diseases of the ear. Injuries, tumors, nervous and circulatory neurological disturbances of the ear. Diagnosis and treatment of tinnitus and vertig iagnosis and rehabilitation of the Hearing handicapped including, dispensing of hearing aid other vibrotactile aids.
    - Surgical pathology of Otolaryngology and Head Neck region.
    - Basic knowledge of anaesthesia as related to ENT.
    - Examination of diseases of children (Paediatric ORL) in connection with throat and larynx. Neurological and vascular disturbances. Congenital and neonatal stridor.
    - Pathology of various diseases of the larynx and throat, trachea bronchial tree and their causative organisms.
    - Indications and various techniques of direct laryngoscopy, nasal endoscopy. Bronchoscopy and oesophagoscopy, including microlaryngoscopic procedures.
    - Reading of radiograms, scans, audiograms, nystagmograms and tympanograms in connection with ENT diseases/disorders.
    - Special apparatus for the diagnosis and treatment of the diseases of ear, nose and throat including audiometer, BERA, Speech analyser etc.

Recent advances in Otolaryngology and Head Neck surgery

- Recent developments in the diagnosis, pathogenesis and treatment of the ENT diseases
- The knowledge of the frontiers of the oto-laryngology and lateral skull base surgery
- Rhinoplasty, endoscopic sinus surgery, and anterior cranial fossa surgery
- Knowledge of LASERS and fibre optics
- Other methods of managing Hearing loss
- Implantable hearing aids cochlear implants
- Phonosurgery
- Etiology and Managements of sleep apnoea/snoring
- Hypophysectomy and optic nerve decompressions
- Immunotherapy and modalities of the gene therapy
- Newer techniques for Radiotherapy including, use of gamma knife for treatment of Intracranial tumors and other malignancy
- Chemotherapy of cancer

General Surgical Principles and Head-Neck Surgery

- General Surgery, Head and Neck oncology, and Medicine as applicable to the ENT disorders/diseases. Surgery of congenital deformities of nose, ear (Pinna) and trachea/oesophagus etc
- Radiology, Imaging – computed tomography and magnetic resonance imaging, (MRI) and intervention radiology and angiography as related to ENT
- General Pathologic aspects such as wound healing and also pathology and Pathogenesis of ENT diseases, Pharmacology, molecular biology, genetics, cytology, haematology, and immunology as applicable to otolaryngology
- General Principles of faciomaxillary traumatology and neck injury
- Plastic Surgery as applicable to Otolaryngology

B. Affective Domain

1. The student will show integrity, accountability, respect, compassion and dedicated patient care. The student will demonstrate a commitment to excellence and continuous professional development.

2. The student should demonstrate a commitment to ethical principles relating to providing patient care, confidentiality of patient information and informed consent.
3. The student should show sensitivity and responsiveness to patients' culture, age, gender and disabilities.
4. The student should be able to choose the required investigations to enhance the attitude, communicative skills, including dealing with patient's relatives with the required empathy, adapt to changing trends in education, learning methods and evolving new diagnostic and therapeutic techniques in the subject of ENT.

C. Psychomotor Domain

By the end of the training, a student should be able to demonstrate his skills in:

- Taking a good history and demonstrating good examination techniques.
- Arrive at a logical working diagnosis, differential diagnosis after clinical examination and order appropriate investigations keeping in mind their relevance (need based) and thereby provide appropriate care that is ethical, compassionate, responsive and cost effective and in conformation with statutory rules.
- Should be able to perform and demonstrate the practical skills in the field of ENT including the following:
    - Examination of the ear, nose and throat oral cavity examination
    - Clinico-physiological examination and evaluation of the audio-vestibulo neurological system
    - Examination of the larynx and the throat including flexible endoscopy, stroboscopy, voice analysis and the clinico-physiological examination of the speech
    - Examination of the otological and audiological system including Tuning fork testing, audiological evaluation, micro and otoendoscopy
    - Clinical and physiological evaluation of the nose and paranasal sinuses including nasal endoscopy and olfactory evaluation

- Examination of the neck and its structures

- Should demonstrate and perform various therapeutic skills related to the speciality such as :

  ➢ Tracheostomy

  ➢ Anterior/ posterior nasal packing

  ➢ Ear packing and syringing

  ➢ Foreign body removal from ear, nose and throat

  ➢ Airway management including basic life support skills, Cardiopulmonary resuscitation, intubation, homeostasis maintenance, IV alimentation and fluid, electrolyte maintenance and principles of blood transfusion alimentation including Nasogastric feeding, gastrostomy

  ➢ Wound suturing, dressings and care of the wounds

  ➢ Basic principles of rehabilitation

  ➢ Common procedures like FNAC, biopsy, aspiration from serous cavities, lumber puncture etc.

- Should understand principles of and interpret X-rays/CT/MRI, audiograms, ENG, BERA, OAE, ultrasonographic abnormalities and other diagnostic procedures in relation to the speciality

- Should have observed/performed under supervision the various surgical procedures in relation to the speciality

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. Timitus

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
6. Osteology: skull, mandible cervical and thoracic vertebral sternum
7. Cervical fascia, facial spaces in neck, retro-pharyngeal and parapharyngeal Abscesses
8. Anatomy and physiology of thyroid gland, goitre, diseases of the thyroid and carcinoma of thyroid

9. Large blood vessels in neck, thoracic duck development of major cervical and thoracic blood vessels.
10. Head and neck reconstructive surgery

Drugs used in ENT:

1. Antibiotics Antihistaminic
2. Nasal vasoconstrictors
3. Local anaesthetics
4. Corticosteroids
5. Cytotoxic 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.

A candidate pursuing the course should work in the institution as a full time student. No candidate should be permitted to run a clinic/laboratory/nursing home while studying postgraduate course. Each year should be taken as a unit for the purpose of calculating attendance.

Every student shall attend teaching and learning activities during each year as prescribed by the
department and not absent himself / herself from work without valid reasons.

A list of teaching and learning activities designed to facilitate students acquire essential knowledge and skills outlined is given below.

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. **Lectures**: Lectures are to be kept to a minimum. They may, however, be employed for teaching certain topics. Lectures may be didactic or integrated.

a) Lectures: Lectures recommended for selected common topics for post graduate students of all specialties. Few topics are suggested as examples:

i. Bio-statistics
ii. Use of library
iii. Research methods
iv. Medical code of conduct and medical ethics
v. National heath and Diseases control programmes
vi. Communication skills etc.

These topics may preferably taken up in the first few weeks of the 1st year.

4. **Journal Club**

Recommended to be held once in a week. All the PG students are expected to attend and actively participate in discussion and enter in the Log book relevant details. Further, every candidate must make a presentation from the allotted journal(s), selected articles at least four times a year and a total of 12 journal presentations in three years. The presentations would be evaluated using check lists. A time table with names of the student and the moderator shall be announced in advance.

5. **Subject Seminar:**

Recommended to be held once a week. All the PG students are expected to attend and actively participate in discussion and enter in the Log Book relevant details. Further,

every candidate must present on selected topics at least four times a year and a total of 12 seminar presentations in three years. The presentations would be evaluated using check list. A timetable for the subject with names of the student and the moderator should be announced in advance. The seminars are structured and divided into smaller for better understanding of the topic by the presenter.

First year residents are encouraged to make use of white/black board for drawing diagrams on the spot during anatomy classes.

6. Cadaveric head and neck and temporal bone dissection:

A minimum of 1 wet bone and 4 dry temporal bone dissection needs to be done by every PG

Resident. The exercises include:

- Cortical mastoidectomy
- MRM and Radical Mastoidectomy
- Facial nerve decompression
- Posterior tympanotomy
- Labrinthectomy
- Endolymphatic sac decompression
- Stapedotomy
- Extended procedures wherever possible

Cadaveric dissection Lab: 2 units of cadaveric temporal lab are present in the department. For head and neck and sinus cadaveric dissections, the resident is expected to visit the anatomy department for learning surgical anatomy by dissection as well and for learning different operative procedures under faculty supervision and independently on a regular basis before/during exposure of particular batch of students to real operative procedures in patients.

7. **Ward Rounds:**

Ward rounds may be service or teaching rounds.

a) Service Rounds: Postgraduate and Interns should do twice every day for the care of the patients. Newly admitted patients should be worked up by the PGs and presented to the seniors the following day.

b) Teaching Rounds: Every unit shall have 'grand rounds' for teaching purpose. A diary should be maintained for day to day activities by the students. Case presentation to be done in the ward Entries (a) and (b) should be made in the Log book.

8. **Clinico-pathological Conference**: Recommended at least once in three months for all postgraduate students. Presentation may be done by rotation. If cases are not available due to lack of clinical post-mortems, it could be supplemented by published CPCs.

9. **Clinical cases:** (minimum of 48 cases in a year) to be presented by the residents on rotation, which will be assessed by using Check lists

10. **Inter-departmental Meetings**: with departments of Pathology and Radio-Diagnosis periodically. Radio-diagnosis: Interesting cases and the imaging modalities should be discussed. These meetings should be attended by post graduate students and relevant entries must be made in the Log Book.

11. **Teaching skills:** Postgraduate students must teach undergraduate students by taking demonstrations, bed side clinics, tutorials etc. Assessment is made using a checklist by the faculty as well as students. Record of their participation may be kept in Log book. Training of post graduate students in Educational Science and Technology is recommended.

12. **Continuing Medical Education Programmes (CME)**

Recommended that at least 4 state/national level CME programmes should be attended by each student in 3 years. It is optional to attend workshops.

13. **Community camps** For rural exposure and also for experience in preventive aspect in rural situation/Hospital/School, patient care camps are to be arranged involving Residents junior faculty.

14. **Emergency situation:** Casualty duty of the department shall be done by rotation by all the PGs with a faculty cover daily by rotation.

15. **Afternoon Clinics:**

(i) Vertigo Clinic: All the patients of vertigo attending ENT OPD/referred cases are

worked up in details by the Residents and are discussed with Faculty and treatment decided upon.

(ii) Headache clinic: For patients with sinus diseases, facial pain and primary headaches

iii) Allergy clinic: for symptomatic patients suffering from nasal allergy

16. **Bedside clinical training** for patient care management and for bedside manners. Daily for half to one hour's duration during ward round with faculty and half an hour in the evenings by senior resident/Faculty on emergency duty. Bedside patient care discussion is to be made. Faculty should take a Teaching Rounds by Rotation.

17. **Death Cases**: The records of such cases are presented by the Senior Residents. The Junior Residents are encouraged to participate actively in the discussion in the presence of Faculty of ENT and hospital administration. This programme helps to take corrective measures as well as to maintain accountability in patient management.

18. **Clinical teaching**: In OPD, ward rounds, Emergency, ICU and the Operation Theatres: Residents/Senior Residents and Faculty on duty in respective places – make discussion on clinical diagnosis/surgical procedures/treatment modalities, including post operative care and preparation discharge slip.

19. **Clinical interaction with audiologists**/speech therapist: Clinical interactions with audiologist/speech therapist pertaining to management of the patients with audiological/speech problems are to be made.

20. **Research Methodology**: 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. The resident shall compulsorily attend the research methodology workshop organized by the university. They can also do add on courses on ethics conducted by the university; however, it is optional.

    Note: The online Basic course in Biomedical Research conducted on SWAYAM portal is mandatory as per the NMC notification.

21. **Writing Thesis**: Thesis progress is presented periodically, once in 3 months and discussion made in the department. Guides/co Guides are to hear the problems of the candidate, can provide assistance to the student. Progress made or any failure of the candidate shall be brought to the notice of HOD/Dean/principal. Every candidate pursuing MD/MS degree course is required to carry out work on a selected research project under the guidance of a recognised postgraduate teacher. The results of such a work shall be submitted in the form of a dissertation.

    i. The dissertation is aimed to train a post graduate student in research methods and techniques. It includes identification of a problem, formulation of a hypothesis, search and review of literature, getting acquainted with recent advances, designing of a research study, collection of data, critical analysis, comparison of results and drawing conclusions.

    ii. Selection of thesis Topic: subject of thesis will be selected by the candidate under guidance of Faculty which will be approved by the department guide and other faculty. The candidate will be asked to submit the protocol within three months of admission after departmental Faculty scrutinizes it. It is to be approved by the BOS, Scientific review committee/Ethical committee of the Institute/College and the ethical considerations are also discussed. Once the thesis protocol is approved the candidate starts his research work under direct supervision of guide and co guides. No change in the dissertation topic or guide shall be made without prior approval of the University.

    iii. The dissertation should be written under the following headings:

        i) Introduction
        ii) Aims or Objectives of study
        iii) Review of Literature
        iv) Material and Methods
        v) Results
        vi) Discussion
        vii) Conclusion
        viii) Summary
        ix) Reference (Vancouver style)

x) Tables

xi) Annexure

iv. The written text of dissertation shall be not less than 50 pages and shall not exceed 150 pages excluding references, tables, questionnaires and other annexure. It should be neatly typed in double line spacing on one side of paper (A4 size, 8.27" x 11.69") and bound properly. Spiral binding should be avoided. The dissertation shall be certified by the guide, head of the department and head of the Institution.

v. Four copies of dissertation thus prepared along with CD shall be submitted to the Registrar (Evaluation), six months before final examination on or before the dates notified by the University.

vi. Three/six monthly progress of the thesis will be checked to know the outcomes/or difficulties faced by the candidate.

vii. Candidate will be asked to submit the thesis 6 months before the final exams.

viii. Thesis shall be submitted at least six months before the Theory and Clinical /Practical examination.

ix. The dissertation shall be valued by External examiner outside the state at the time of the final Practical/Clinical examination. Viva voce will be taken on it and marks will be given on quality of dissertation/thesis and performance on its viva voce.

22. A post-graduate student of a degree course in broad specialty/super specialty will do at least one of the following to make him/her eligible to appear in his/her final examination:
    a. Poster presentation at a National/Zonal/State conference of his/her speciality
    b. Podium presentation at a National/Zonal/State conference of his/her speciality
    c. Have one research paper published/accepted for publication in journal of his/her Speciality as first author
23. E-learning activities are to be encouraged.

24 E - 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

e- Log Book. The e-Log books shall be checked and assessed periodically by the faculty members imparting the training.

Amendments made to Teaching Learning Methods: Role play/interactive lectures, movies to give training in patient counselling, informed consent process, empathy and communication skills

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.

PG Leaves: In addition to 20 days annual leave, the PG residents are eligible to take additional leave to attend state / national level conferences for presenting poster / paper. In addition to this, five days of additional leave will be sanctioned for attending local meeting/ conferences / workshops. Leave for medical illness and special occasions like self-marriage, maternity leave will not be counted for attendance.

Attendance: Every candidate is required to attend a minimum of 80% of the training each academic year of the Postgraduate course. Provided further, leave of any kind shall not be counted as part of academic term without prejudice to minimum 80 % attendance of training period every year.

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).

Monitoring Learning Progress

It is essential to monitor the learning progress of each candidate through continuous appraisal and regular assessment. It not only also helps teachers to evaluate students, but also students to evaluate themselves. The monitoring may be done by the staff of the department based on participation of students in various teaching / learning activities. It may be structured and assessment be done using checklists that assess various aspects. The learning out comes to be assessed should included: (i) Personal Attitudes, (ii) Acquisition of Knowledge, (iii) Clinical and operative skills, (iv) Teaching skills and (v) Dissertation.

i) Personal Attitudes. The essential items are:

- Caring attitudes and Initiative
- Organising ability
- Potential to cope with stressful situations and undertake responsibility
- Trust worthiness and reliability
- To understand and communicate intelligibly with patients and others

- Ability to work in team
- A critical enquiring approach to the acquisition of knowledge

The methods used mainly consist of observation. It is appreciated that these items require a degree of subjective assessment by the guide, supervisors and peers.

ii) Acquisition of Knowledge: The methods used comprise of 'e- Log Book' which records

Participation in various teaching / learning activities by the students. The number of activities attended and the number in which presentations are made are to be recorded. The log book should periodically be validated by the supervisors. Some of the activities are listed. The list is not complete. Institutions may include additional activities, if so, desired.

Journal Review Meeting (Journal Club): The ability to do literature search, in depth study, presentation skills, and use of audio-visual aids are to be assessed. The assessment is made by faculty members and peers attending the meeting using a checklist

Seminar / Symposia: The topics should be assigned to the student well in advance to facilitate in depth study. The ability to do literature search, in depth study, presentation skills and use of audio – visual aids are to be assessed using a checklist

Clinico-pathological conferences: this should be a multidisciplinary case study of an interesting case to train the candidate to solve diagnostic and therapeutic problems by using an analytical approach. The presenter(s) are to be assessed using a check list similar to that used for seminar.

The following teaching activities may be conducted in addition to the above:

1. Case based discussion
2. Temporal Bone Discussion
3. Special case discussion
4. Tutorials
5. Faculty Lecture
6. Direct Observation of Procedural Skill (DOPS)

Day to day work: Skills in outpatient and ward work should be assessed periodically. The assessment should include the candidates' sincerity and punctuality, analytical ability and communication skills

Clinical Meetings: Candidates should periodically present cases to his peers and faculty members. This should be assessed using a check list

(iv) Teaching Skills:

Candidates should be encouraged to teach undergraduate medical students and paramedical students, if any. This performance should be based on assessment by the faculty members of the department and from feedback from the undergraduate students

(v) Dissertation in the Department:

Periodic presentations are to be made in the department. Initially the topic selected is to be presented before submission to the University for registration, again before finalization for critical evaluation and another before final submission of the completed work

(vi) Work diary / e-Log Book

Every candidate shall maintain a work diary and record his/her participation in the training programmes conducted by the department such as journal reviews, seminars, etc. Special mention may be made of the presentations by the candidate as well as details of clinical or laboratory procedures, if any conducted by the candidate. The work diary shall be scrutinised and certified by the Head of the Department and Head of the Institution, and presented in the university practical/clinical examination.

(vii) Periodic tests:

The department may conduct three tests, two of them be annual tests, one at the end of first year and the other in the second year. The third test may be held three months before the final examination. The tests may include written papers, practical / clinical, viva voce and OSCE. These tests may be conducted periodically (monthly, quarterly or annually).

(viii) Records

Records, log books and marks obtained in tests will be maintained by the Head of the Department and will be made available to the University or NMC.

E -Log Book

The e-log book is a record of the important activities of the candidates during his training, internal assessment should be based on the evaluation of the log book. Collectively, e-log

books are a tool for the evaluation of the training programme of the institution by external agencies. The record includes academic activities as well as the presentations and procedures carried out by the candidate and is to be updated weekly and supervised by the guide.

Procedure for defaulters: The defaulting candidate is counselled by the guide and head of the: department. In extreme cases of default the departmental committee may recommend that defaulting candidate be withheld from appearing the examination, if she/he fails to fulfil the requirements in spite of being given adequate chances to set himself or herself right.

SUMMATIVE ASSESSMENT i.e., at the end of the training

The summative examination would be carried out as per the Rules given in
REVISED POSTGRADUATE MEDICAL EDUCATION REGULATIONS, 2023.

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 recognized 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 dissertation shall be valued by External examiner outside the state at the time of the final Practical/Clinical examination. Viva voce will be taken on it and marks will be given on quality of dissertation/thesis and performance on its viva voce.

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. Thesis Discussion and OSCE will be conducted as part of Clinical / Practical examination.

External examiner outside the state will evaluate dissertation/ thesis and take viva voce on it and marks will be given on quality of dissertation/thesis and performance on its viva voce. Five per cent of mark of total marks of Clinical/Practical and Viva Voce marks (20 marks) will be of dissertation/thesis and it will be part of clinical/practical examination marks.

The clinical examinations will be held as per NMC Guidelines. Results of the examination will be declared as pass/failed. (Grades/marks will be given as per the University Rules). While doing so, both, formative and summative assessment will be taken into consideration.

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 e- Log Book Records and day- to-day observation during the training.

Scheme of Examinations: (As per PGMER December 2023)

SL NO	THEORY PAPER	Max.Marks
Paper 1	Basic Sciences related Otolaryngology	100
Paper 2	Principles and Practices of Otolaryngology	100
Paper 3	Recent Advances in Otolaryngology and Head- Neck Surgery	100
Paper 4	General Surgical Principles and Head- Neck Surgery	100
Total Marks		**400 marks**

PRACTICAL/CLINICAL		MARKS ALLOTTED (300)	
a)	Long Case	120	
b)	Short Case 1	60	
c)	Short Case 2	60	
d)	OSCE	40 (8 station * 5 Marks)	
e)	Thesis Discussion	20	
	Total	**300**	
VIVA VOCE		MARKS ALLOTED(100)	
a)	Instruments, Operative ORL	10+ 20	30
b)	Specimens, slides and Bones	05+05+10	20
c)	Radiology	20	20
d)	Audiology and Vestibular assessment- VNG, fHIT	20+10	30
	Total	**100**	
Total (Clinical + Viva voce)		**400 marks**	

CRITERIA FOR EVALUATION OF M.S. COURSE

1. THEORY

No. of Theory Papers 4

Marks for each Theory Paper 100

Total marks for Theory Paper 400

Passing Minimum for Theory 200/400 (40% minimum in each paper)

2. PRACTICAL/CLINICAL 300 marks

3 VIVA VOCE 100 marks

Passing minimum for Practical/Clinical including Viva voce 200/400

The candidate shall secure not less than 50% marks in each head of passing which shall include

(1) Theory – aggregate 50% (In addition, in each Theory paper a candidate has to secure minimum of 40%)

(2) Practical/Clinical and Viva voce - aggregate 50%

(3) If any candidate fails even under one head, he/she has to re-appear for both Theory and Practical/Clinical and Viva voce examination.

(4) Five per cent of mark of total marks of Clinical/Practical and Viva Voce marks (20 marks) will be of dissertation/thesis and it will be part of clinical/practical examination marks. External examiner outside the state will evaluate dissertation/ thesis and take viva voce on it and marks will be given on quality of dissertation/thesis and performance on its viva voce.

(5) No grace mark is permitted in post-graduate examination either for theory or for practical.

Examiners/ Final Examinations

A) There shall be four examiners including two external and two internal.

a. The examiner (both internal and external) for the post-graduate examination in Broad and Super Specialties shall have three years' experience as recognised Post-graduate Guide in the concerned subject.

b. The minimum number of examiners for post-graduate examination shall be four. Out of which, at least two shall be external examiners and least one of them shall be from different university outside the state.

c. An examiner shall not be appointed for more than two consecutive regular examinations for the same institution.

B). All examiners shall be jointly responsible for the examination.

Syllabus for Individual Papers and question paper pattern Amended as per MCI Notification

Paper I: Basic Sciences related Otolaryngology

- Physiology - Mechanism of perception of smell and taste, mechanism of breathing and voice production, lacrimation, deglutition and salivation. Functional tests of the nose and paranasal sinuses, mechanism of cough and sneezing.
- Physics of sound, theories of hearing, mechanism of perception of sound and speech production, physiology of equilibrium and cerebral function. Physiology of brain in connection with hearing, speech, smell and phonation. Audiologic tests like audiometry,impedance, evoked potentials, OAE, Speech audiometry.
- Physiology of larynx, tracheobronchial tree and oesophagus - Histology of mucous membranes, internal ear and other associated organs and structures, nose, PNS NPx, Larynx,Tracheo-Bronchial tree, Lymphoepithetical system. Mechanism of immune system/immunology and genetics.
- Anatomy - Embryogenesis of ear, nose and throat including palate and the larynx, Oesophagus, trachea and lungs, tongue, salivary gland Head and Neck and skull base etc.
- Parapharyngeal spaces in the neck including connective tissue barriers of larynx.
- Applied anatomy of the skull bones, accessory sinuses, external, middle and inner ears, nose, PNS, nasopharynx, meninges, brain, pharynx, larynx, trachea and bronchi, lungs, pleurae, oesophagus and the mediastinum.
- Anatomy of all cranial nerves with their functions.

Paper II: Principles and Practices of Otolaryngology

- Clinical Methodology as applied to ORL HN diseases in adult and children and the accessory sinuses, diagnosis and surgical treatment of diseases of nose, throat and ear in adult and children. Prevention and treatment, infectious diseases of Otolaryngology and Head Neck region. Circulatory and nervous disturbances of the nose, throat and

ear and their effects on other organs of the body. Deformities, injuries sinus infections, polyps and the tumors of the nose, and paranasal sinuses.

- Examination of the ear, deafness and allied diseases, complications of diseases of the ear. Injuries, tumors, nervous and circulatory neurological disturbances of the ear. Diagnosis and treatment of tinnitus and vertigo. Diagnosis and rehabilitation of the Hearing handicapped including, dispensing of hearing aid other vibrotactile aids.
- Surgical pathology of Otolaryngology and Head Neck region. Basic knowledge of anaesthesia as related to ENT.
- Examination of diseases of children (Paediatric ORL) in connection with throat and larynx. Neurological and vascular disturbances. Congenital and neonatal stridor.
- Pathology of various diseases of the larynx and throat, tracheo-bronchial tree and their causative organisms.
- Indications and various techniques of direct laryngoscopy, nasal endoscopy. Bronchoscopy and oesophagoscopy, including microlaryngoscopic procedures.
- Reading of radiograms, scans, audiograms, nystagmograms and tympanograms in connection with ENT diseases/disorders.
- Special apparatus for the diagnosis and treatment of the diseases of ear, nose and throat including audiometer, BERA, Speech analyser etc.

Paper III: General Surgical Principles and Head-Neck Surgery

- General Surgery, Head and Neck oncology, and Medicine as applicable to the ENT disorders/diseases. Surgery of congenital deformities of nose, ear (Pinna) and trachea/oesophagus etc.
- Radiology, Imaging – computed tomography and magnetic resonance imaging, (MRI) and intervention radiology and angiography as related to ENT.
- General Pathologic aspects such as wound healing and also pathology and Pathogenesis of ENT diseases, Pharmacology, molecular biology, genetics, cytology, haematology, and immunology as applicable to otolaryngology.

- General Principles of faciomaxillary traumatology and neck injury.
- Plastic Surgery as applicable to Otolaryngology.

Paper IV: Recent advances in Otolaryngology and Head Neck surgery

- Recent developments in the diagnosis, pathogenesis and treatment of the ENT diseases.
- The knowledge of the frontiers of the oto-laryngology and lateral skull base surgery.
- Rhinoplasty, endoscopic sinus surgery, and anterior cranial fossa surgery.
- Knowledge of LASERS and fibre optics.
- Other methods of managing Hearing loss.
- Implantable hearing aids cochlear implants.
- Phonosurgery
- Etiology and Managements of sleep apnoea/snoring,
- Hypophysectomy and optic nerve decompressions.
- Immunotherapy and modalities of the gene therapy
- Newer techniques for Radiotherapy including, use of gamma knife for treatment of Intracranial tumors and other malignancy.
- Chemotherapy of cancer.

Recommended Reading:

Books (latest edition)

1) Scott-Brown's Otorhinolaryngology and Head and Neck Surgery
2) Cummings Otolaryngology - Head and Neck Surgery
3) Otolaryngology, Otology & Neurotology by Paprella & Micheal
4) Glasscock-Shambaugh's Surgery of the Ear
5) Essentials of Functional Sinus Surgery by Heinz Stammberger MD
6) Color Atlas of Head & Neck Surgery by Jatin P Shah
7) Handbook of Clinical Audiology by Jack Katz
8) Stell & Maran's Textbook of Head and Neck Surgery and Oncology

Journals

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

Blue Print

DEPARTMENT OF OTORHINOLARYGOLOGY

Blueprint for the theory papers (Content weightage paper-wise) for summative (university) exam for MS in Otorhinolarygology

Theory shall consist of four papers of 3 hours/100 marks 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.

Basic Sciences related to Otolaryngology

		Weightage (%) / Marks allotted
1.	Physiology- Mechanism of perception of smell and taste, mechanism of breathing and voice production, lacrimation, deglutition and salivation. Functional tests of the nose and paranasal sinuses, mechanism of cough and sneezing.	**30**
2.	Physics of sound, theories of hearing, mechanism of perception of sound and speech production, physiology of equilibrium and cerebral function. Physiology of brain in	**10**

	connection with hearing, speech, smell and phonation. Audiologic tests like audiometry, impedance, evoked potentials, OAE, Speech audiometry.	
3.	Physiology of larynx, tracheobronchial tree and oesophagus - Histology of mucous membranes, internal ear and other associated organs and structures, nose, PNS NPx, Larynx, Tracheo-Bronchial tree, Lymphoepithetical system. Mechanism of immune system/immunology and genetics.	**10**
4.	Anatomy-Embryogenesis of ear, nose and throat including palate and the larynx, Oesophagus, trachea and lungs, tongue, salivary gland Head and Neck and skullbase etc.	**5**
5.	Parapharyngeal spaces in the neck including connective tissue barriers of larynx.	**10**
6.	Applied anatomy of the skull bones, accessory sinuses, external, middle and inner ears, nose, PNS, nasopharynx, meninges, brain, pharynx, larynx, trachea and bronchi, lungs, pleurae, oesophagus and the mediastinum.	**30**
7.	Anatomy of all cranial nerves with their functions.	**5**
Total		**100**

Principles and Practices of Otolaryngology, Audiology and Speech Pathology

		Weightage(%) / Marks allotted
1.	Clinical Methodology as applied to ORL HN diseases in adult and children and the accessory sinuses, diagnosis and surgical treatment of diseases of nose, throat and ear in adult and children. Prevention and treatment, infectious diseases of Otolaryngology and Head Neck region. Circulatory and nervous disturbances of the nose, throat and ear and their effects on other organs of the body Deformities, injuries sinus	**30**

	infections, polyps and the tumors of the nose, and paranasal sinuses.	
2.	Examination of the ear, deafness and allied diseases, complications of diseases of the ear. Injuries, tumors, nervous and circulatory neurological disturbances of the ear. Diagnosis and treatment of tinnitus and vertigo. Diagnosis and rehabilitation of the Hearing handicapped including, dispensing of hearing aid other vibrotatile aids. • Surgical pathology of Otolaryngology and Head Neck region. • Basic knowledge of anaesthesia as related to ENT. • Examination of diseases of children (Paediatric ORL) in connection with throat and larynx. Neurological and vascular disturbances. Congenital and neonatal stridor. • Pathology of various diseases of the larynx and throat, tracheobronchial tree and their causative organisms.	**40**
3.	Indications and various techniques of direct laryngoscopy, nasalendoscopy. Bronchoscopy and oesophagoscopy, including microlaryngoscopic procedures	**30**
4.	Reading of radiograms, scans, audiograms, nystagmograms and tympanograms in connection with ENT diseases/disorders.	
5.	Special apparatus for the diagnosis and treatment of the diseases of ear, nose and throat including audiometer, BERA, Speech analyser etc.	
Total		**100**

Recent advances in Otolaryngology and Head Neck surgery

		Weightage(%) / Marks allotted

1.	Recent developments in the diagnosis, pathogenesis and treatment of the ENT diseases	**20**
2.	The knowledge of the frontiers of the oto-laryngology and lateral skull bas surgery	**10**
3.	Rhinoplasty, endoscopic sinus surgery, and anterior cranial fossa surgery, Hypophysectomy and optic nerve decompressions	**10**
4.	Other methods of managing Hearing loss	**10**
5.	Implantable hearing aids cochlear implants	
6.	Phonosurgery, Knowledge of LASERS and fibre optics	**20**
7.	Etiology and Managements of sleep apnoea/snoring	
8.	Immunotherapy and modalities of the gene therapy	**10**
9.	Newer techniques for Radiotherapy including, use of gamma knife for treatment of Intracranial tumors and other malignancy	**20**
10.	Chemotherapy of cancer	
Total		**100**

General Surgical Principles and Head-Neck Surgery

		Weightage(%) / Marks allotted
1.	General Surgery, Head and Neck oncology, and Medicine as applicable to the ENT disorders/diseases. Surgery of congenital deformities of nose, ear (Pinna) and trachea/oesophagus etc.	**30**
2.	Radiology, Imaging – computed tomography and magnetic resonance imaging,(MRI) and intervention radiology and angiography as related to ENT	**20**
3.	General Pathologic aspects such as wound healing and also	**30**

	pathology and Pathogenesis of ENT diseases, Pharmacology, molecular biology, genetics, cytology, haematology, and immunology as applicable to otolaryngology	
4.	General Principles of faciomaxillary traumatology and neck injury	**10**
5.	Plastic Surgery as applicable to Otolaryngology	**10**
Total		**100**

Model Question Paper

Model Paper
Otorhinolaryngology
Paper I

Exam Date:
Time: 3 hrs Max Marks: 100

(Basic Sciences related to Otolaryngology)

Your answers should be specific to the questions asked.
Draw neat labelled diagrams wherever necessary**.**

SHORT ESSAYS **(10x10= 100 Marks)**

1. Discuss the role of semicircular canals in the maintainence of balance.
2. Explain the anatomy of sphenoid bone. Add a note on sphenoid pneumatization and its clinical
Significance (6+4)
3.Discuss the physiology of deglutition. Add a note on FEES (7+3)
4. Explain the boundaries and contents of infratemporal fossa. Add a note on course and branches of maxillary artery (3+3+4)
5.Explain the embryology and derivatives of pharyngeal arches and pharyngeal pouches.
6. Explain recruitment phenomenon. Describe the tests of recruitment (2 + 8)
7. What are the types of hypersensitivity reactions? Explain type 1 hypersensitivity reactions with its clinical implications? (4+6)
8. Explain the types, procedure and clinical implications of rhinomanometry? (2+ 4 + 4)
9. Describe the different spaces in the larynx. Explain the clinical significance of each space (6 +4)
10. Describe the taste pathway. Discuss some conditions causing abnormalities in taste (7+3)

Model Paper
Otorhinolaryngology
Paper II

Exam Date:

Time: 3 hrs Max Marks: 100

(Principles and Practices of Otolaryngology)

Your answers should be specific to the questions asked.
Draw neat labelled diagrams wherever necessary**.**

SHORT ESSAYS (10x10= 100 Marks)

1. Define stridor. List the causes of neonatal stridor. How will you evaluate a case of neonatal stridor? (1+3+6)

2. Enumerate the causes of hearing loss in a child. How will you assess a 3 year old child with hearing loss? (4+6)

3. A 5 year old child with repeated admissions to the the paediatric ICU for chest infection is referred to ENT with a suspicion of foreign body aspiration. How will you evaluate and further manage this child? What are the anaesthetic implications in the management of this case? (5+5)

4. List the indications for modified radical neck dissection. Add a note on its complications. (4+6)

5. Describe the etiopathogenesis and clinical features of Acoustic neuroma. What is the role of BERA in evaluation of a case of Acoustic neuroma? (6+4)

6. What is the role of balloon sinuplasty in the treatment of chronic sinusitis? How is it performed? Add a note on its advantages and disadvantages. (3+3+2+2)

7. Enumerate the ENT causes of proptosis. How will you evaluate a patient with proptosis? (4+6)

8. Outline the Surgical steps of stapedotomy. Add a note on complications of the procedure. What is the role of Laser in stapedotomy? (3+5+2)

9. Describe the etiopathogenesis, clinical features and management of nasal myiasis. (3+3+4)

10. Define AIDS. What are its modes of transmission? Enumerate the ENT manifestations of AIDS (2+2+6)

Model Paper
Otorhinolaryngology
Paper III

Exam Date:
Time: 3 hrs Max Marks: 100

(Recent Advances in Otolaryngology and Head- Neck Surgery)

Your answers should be specific to the questions asked.
Draw neat labelled diagrams wherever necessary**.**

SHORT ESSAYS (10x10= 100 Marks)

1. Describe briefly the indications, steps and disadvantages of Modified Lothrop procedure. Add a note on International Frontal Sinus Anatomy Classification (IFAC). (7+3)
2. Explain the principles of LASER. Different types of Lasers and its clinical implications in ENT. (3+7)
3. Narrow Band imaging
4. Gene therapy and its application in Otorhinolaryngology (5+5)
5. Coblator and it applications in Otorhinolaryngology.
6. Describe the principles, techniques of IMRT (Intensity Modulated Radiation Therapy) and its clinical applications in head and neck (3+3+4)
7. Polysomnography
8. Describe Hadad Bassagasteguy flap. Describe the steps of Endoscopic Hypophysectomy (3+7)
9. Role of Monoclonal antibodies in head and neck malignancy.
10. BAHA

Model Paper
Otorhinolaryngology
Paper IV

Exam Date:
Time: 3 hrs Max Marks: 100

(General Surgical Principles and Head- Neck Surgery)

Your answers should be specific to the questions asked.
Draw neat labelled diagrams wherever necessary**.**

SHORT ESSAYS (10x10= 100 Marks)

1. A 6 year old male child presented with right ear pinna partial deformity with complete absence of EAC . What is the likely diagnosis? Explain the management, add a note on grading system, surgical procedure and techniques of Otoplasty (1+2+7)

2. A 17 year old male presented with profuse bleeding of nose. On examination frog face deformity and fleshy mass seen in the left nostril. What is the likely diagnosis? Write the differential diagnosis for this clinical presentation. Add a note on pathogenesis and management of this condition (1+3+6)

3. Digital subtraction angiography

4. Describe the levels of neck injury. Discuss the management of laryngotracheal trauma with classification (4+6)
5. Describe the pathogenesis of Ménière's disease. Explain the steps of Endolymphatic sac decompression (4+6)
6. Describe the indications, techniques and materials used in Augmentation Rhinoplasty. Add a note on its complications (3+4+4)
7. Discuss the developmental anomaly of cochlea. Write short notes on CSF gusher during Cochlear implantation and its management (6+4)
8. Discuss the approaches for facial nerve decompression.
9. Immunotherapy
10. Describe the etiopathogenesis, clinical features and management of Zenker's diverticulum.(2+3+5)

Formative Assessment Plan

Current plan for formative assessment of PGs - Dept of ENT

Theory	1.Monthly written test
Clinical/practical	1. case presentations- scored 2. special case discussion as CBD –scored 3. DOPS 3. Quarterly OSCE
Viva voce	1. Scorings of seminar

Format of Model Check Lists

Check List – I.

MODEL CHECK-LIST FOR EVALUATION OF JOURNAL REVIEW PRESENTATIONS

Name of the Student: Date:

Name of the Faculty / Observer:

Sl No.	Items for observation during presentation	Poor 0	Below Average 1	Average 2	Good 3	Very Good 4
1.	Article chosen was					
2.	Extent of understanding of scope & objectives of the paper by the candidate					
3.	Whether cross references have been consulted					
4.	Whether other relevant publications consulted					
5.	Ability to respond to questions on the paper / subject					
6.	Audio-Visual aids used					
7.	Ability to defend the paper					
8.	Clarity of presentation					
9.	Any other observation					
	Total Score					

Check List – II

MODEL CHECK-LIST FOR EALUATION OF SEMINAR PRESENTATIONS / JOURNAL CLUB

Name of the Student: Date:

Name of the Faculty / Observer:

SI No.	Items for observation during presentation	Poor 0	Below Average 1	Average 2	Good 3	Very Good 4
1.	Whether other relevant publications consulted					
2.	Whether cross references have been consulted					
3.	Completeness of Preparation / Article chose was					
4.	Clarity of Presentation / Audibility / Proficiency in language					
5.	Understanding of subject / knowledge in the subject					
6.	Ability to answer questions / interaction					
7.	Time scheduling / attitude / body language					
8.	Appropriate use of Audio-visual aids					
9.	Overall Performance					
	Total Score					

CHECK LIST – III

MODEL CHECK LIST FOR EVALUATION OF CLINICAL WORK IN WARD / OPD

(To be completed once a month by respective Unit Heads)

Name of the Student: Date:

Name of the unit Head:

Sl. No.	Points to be considered	Poor 0	Below Average 1	Average 2	Good 3	Very Good 4
1.	Regularity of attendance					
2.	Punctuality					
3.	Interaction with colleagues and supportive staff					
4.	Maintenance of case records					
5.	Presentation of cases during rounds					
6.	Investigations work up					
7.	Beside manners					
8.	Rapport with patients					
9.	OT work					
	Post-op & follow-up					
10.	Overall quality of Ward work					
	Total Score					

CHECK LIST – IV

EVALUATION FORM FOR CLINICAL PRESENTATION

Name of the Student: Date:

Name of the Faculty:

Case Presented :

Sl. No.	Points to be considered	Poor 0	Below Average 1	Average 2	Good 3	Very Good 4
1.	Completeness of history with all relevant points elicited					
2.	Clarity of Presentation / Audibility					
3.	Mentioned all positive and negative points of importance					
4.	Accuracy of general physical / local examination					
5.	Diagnosis Whether it follows logically from history and findings					
6.	Approach to the management, investigations & step by step discussion of treatment with application of logic & relevance					
7.	Proficiency of language & knowledge of the subject					
	Grand Total					

CHECK LIST – V

EVALUATION FORM FOR TEMPORAL BONE DISSECTION

Name of the Student: Date:

Name of the Faculty:

Surgical procedure:

Completeness of the procedure with surgical boundaries defined well: Complete / Incomplete

Sl. No.	Points to be considered	Poor 0	Below Average 1	Average 2	Good 3	Very Good 5
1.	Has identified all the surgical landmarks of importance					
2.	Knows the critical steps of the surgical procedure and precautions to be taken.					
3.	Knows the indications for the procedure					
4.	Knows the complications of the procedure					
	Grand Total					

Comments:

CHECK LIST – VI

EVALUATION FORM FOR CASE BASED DISCUSSION

Name of the Student: Date:

Name of the Faculty:

Case Complexity: Low / Moderate / High

Basis for Discussion: Out patient record / In patient record / Discharge summary / other

If others- Specify:

Brief description of case including curricula areas covered:

Sl. No.	Points to be considered	Well below expectation	Below expectation	Borderline expectation	Meets expectation	Above Expectation	Well above Expectation	Unable to comment
1.	Medical Record Keeping							
2.	Clinical Assessment							
3.	Investigations and referrals							
4.	Management plan							
5.	Follow up and future planning							
6.	Overall clinical judgement							
	Grand Total							

Which aspects of the encounter were done well? :

Any suggested areas for development:

Agreed action:

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 Assessor Signature of Consultant Signature of HOD