



PRAVARA INSTITUTE OF MEDICAL SCIENCES (DEEMED TO BE UNIVERSITY)

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NAAC Re-accredited with 'A' Grade

SYLLABUS

PG Programme- MS ENT (Otorhinolaryngology)

(Competency Based Post Graduate Curriculum will be implemented from PG students batch admitted from 2021-22 Batch)

REVISED SYLLABUS AS PER 2023 NMC GUIDELINES

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 ENT is to standardize Otorhinolaryngology teaching at Post Graduate level through out 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".

SUBJECTS PECIFIC LEARNING OBJECTIVES

At the end of post graduate training the student should be able to:

1. Practice his specialty ethically keeping in mind there quire ent 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 advise 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.

SUBJECT SPECIFIC LEARNING OBJECTIVES

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, lumbar puncture etc. She/he should be able to choose the required investigations to enhance 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 sources 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

A. 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 NPx, Larynx, Tracheo-Bronchial tree, Lymphoepithelial 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, naso pharynx, 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 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, tracheo-bronchial tree and their causative organisms.
- Indications and various techniques of direct laryngoscopy, nasal endoscopy. Bronchoscopy and oesophagoscopy, including micro laryngoscopic 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 fiber optic
- Implantable hearing aids cochlear implants
- Phonosurgery
- Etiology and managements of sleep apnoea/snoring
- Hyposectomy 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
 - Clinic-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 ontological and audiological system including Tuning fork testing, audiological evaluation, micro and oto endoscopy
 - Clinical and physiological valuation 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 specialty such as :
 - Tracheostomy
 - Anterior/posterior nasal packing
 - Ear Packing and syringing
 - Foreign body removal from air nose and throat
 - Airway management including basic life supports kills, 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, ultra sonographic abnormalities and other diagnostic procedures in relation to the specialty
- Should have observed/performed under supervision the various surgical procedures in relation to the specialty

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. Anesthesia for Otolaryngology
8. Pharmacology of drugs used in ENT
9. Electrolyte fluid
10. Use of teaching aids
11. Routine blood, urine testing
12. Preparation of slides
13. Facial nerve stimulation test
14. Audiometry 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 sinus it is
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. Microlaryngeal 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 anesthetics
4. Corticosteroids
5. Cyto-toxic agents
6. Antibiotics
7. Radioactive isotopes
8. Anti fungal 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. Cosmetic surgery of the nose
2. Non-healing granuloma of the nose
3. Surgery of the pterygo palatine 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:**

The theoretical knowledge is imparted to the post graduate student through distinct Courses of lecture demonstrations, seminars, symposia and inter- and intradepartmental meetings. The students are exposed to recent advances through discussions in journal clubs and participation in CMEs, and symposia.

The post graduate students are imparted clinical training in several ways:1. ***Group Discussion***

The junior post graduate students may present the symposium to their senior postgraduates where it is fully discussed before finally being discussed in front of the faculty or senior eye specialists. A free and fair discussion is encouraged. These discussions enable the post graduate students to prepare for a general discussion in the class.

2. ***Clinical Case discussion***

- a. Bedside discussion on the rounds and outpatient teaching take their toll with patient management. Therefore in addition to these, clinical case discussions should form part of a department's schedule at a fixed time every week. This could range from 1-2 hours and could be held at least once a week. The choice and manner of presentation and discussion varies widely and is left to the discretion of the department. Every effort should be made to include as wide a variety of cases as possible over three years with multiple repetitions. Problem oriented approach is better as it aids in decision making skills.
- b. In addition to bedside teaching rounds, at least 5-hr of formal teaching per week are necessary.
- c. Consultant case presentation is another approach which should be encouraged as it aids in solving complex problems and also is forum for discussion of interesting cases.

- d. Case discussions on the patient's records written by the student is to be encouraged as it helps exercise the student's diagnostic and decision making skills. It also helps the consultant in critical evaluation of the student's progress academically.
- e. Case presentation at other in-hospital multidisciplinary forums.
- f. The postgraduate students shall be required to participate in the teaching and training programme of undergraduate students and interns.
- g. Department should encourage e-learning activities.

3. **Seminars**

Seminars should be conducted at least once weekly. The duration should be at least one hour. The topics selected should be repeated once in 3 years so as to cover as wide a range of topics as possible. Seminars could be individual presentations or a continuum (large topic) with many post graduate students participating.

4. **Journal clubs**

Journals are reviewed in particular covering all articles in that subject over a 6 months period and are discussed by the post graduate student under the following headings.

- | | | |
|--------------------|------------|-----------------|
| 1) Aim | 2) Methods | 3) Observations |
| 4) Discussions and | | 5) Conclusions |

The post graduate student to whom the journal is allotted presents the journal summaries to the senior postgraduates. They are expected to show their understanding of the aspects covered in the article and clarify any of the points raised in the article, offer criticisms and evaluate the article in the light of known literature.

- 5. 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.
- 6. **Out-Patients:** For the first six months of the training programme, post graduate students may be attached to a faculty member to be able to pick up methods of history taking and ocular examination in ophthalmic practice. During this period the post graduate student may also be oriented to the common ophthalmic problems. After 6 months, the clinical post graduate student may work

independently, where he receives new and old cases including refractions and prescribes for them. The post graduate students are attached to a senior post graduate student and faculty member whom they can consult in case of difficulty.

7. **Wards:** Each post graduate student may be allotted beds in the in-patient section depending upon the total bed capacity and the number of the post graduates. The whole concept is to provide the post graduate student increasing opportunity to work with increasing responsibility according to seniority. A detailed history and case record is to be maintained by the post graduate student.

Relevance of beds and admissions in Ophthalmology has really gone down at present, as most of the surgical and special investigative procedures are being performed on out-patient basis. Most of the teaching has to be imparted in out-patients department and special Clinics.

8. Rotations: Specialty clinics

The student may rotate in the following subspecialty clinics:

Otology
Rhinology
Oncology

9. Practical's in Histopathology

The post graduate students may be provided with fully stained slides of the ocular tissues along with relevant clinical data and discuss the diagnosis and differential diagnosis on the basis of the information provided

10. Attend accredited scientific meetings (CME, Symposia, and Conferences).
11. Additional sessions on basic sciences, biostatistics, research methodology, teaching methodology, hospital waste management, health economics, medical ethics and legal issues related to ophthalmology practice are suggested.

12.. Posting

All PG students shall be posted in OPD, ward and OT as per their units.

PG students should be posted in emergency to deal with any emergency in casualty as well as posting at PHCs on rotational basis

Effort should be made to expose PG students to the latest techniques even though they may have to be sent for some time to the centers performing and using latest instruments or surgeries.

13. Maintenance of E - **log book:** Log books shall be checked and assessed periodically by the faculty members imparting the training.

TRAINING, ETC.

Training Programme

(i) Post-graduate training shall consist of training of the students through lectures, seminars, journal clubs, group discussions, participation in laboratory and experimental work, involvement in research, clinical meetings, grand rounds, clinic pathological conferences, practical training in the diagnosis and medical and surgical treatment, training in the basic medical sciences as well as in allied clinical specialties, etc. as per the requirement of Speciality training. Specialities where patient treatment is involved the teaching and training of the students, shall include graded responsibility in the management and treatment of patients entrusted to their care.

(ii) All post-graduate students will work as full-time resident doctors. They will work for reasonable working hours and will be provided reasonable time for rest in a day.

(iii) All broad-speciality and super-speciality students will do thesis related research and will write thesis.

(iv) Post-graduate students of broad and super Speciality degree courses shall maintain a dynamic e-log book which needs to be updated on a weekly basis about the work being carried out by them and the training programme undergone during the period of training. Provided that M.S. /M.Ch students shall mandatorily enter details of surgical procedures assisted or done independently.

(v) It shall be the duty of the Post-graduate guide imparting the training to assess and authenticate monthly the record (e-Log) books.

(vi) The post-graduate students shall essentially be required to participate in the teaching and training programme of undergraduate students and interns.

(vii) During the training for award of Degree there shall be proper training in basic medical sciences related to the disciplines concerned. During the training programmes emphasis has to be laid on preventive and social aspects. All post-graduate medical college/institution shall have facilities for teaching the basic science subjects as per guidelines.

(viii) 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

(ix) Course in Research Methodology

- a. All post-graduate students shall complete an online course in Research Methodology.
- b. The students shall have to register on the portal of the designated training institutions.
- c. The students are expected to complete the course in the first year.
- d. The online certificate generated on successful completion of the course and

examination thereafter, will be acceptable evidence of having completed this course.

e. The above certification shall be a mandatory requirement to be eligible to appear for the final examination of the respective post-graduate course.

f. This requirement shall be applicable for all post-graduate students.

(x) Course in Ethics

a. All post-graduate students shall complete course in ethics including Good Clinical Practices and Good Laboratory Practices, whichever is relevant to them, to be conducted by institutions/Universities.

b. The students are expected to complete the course in the first year.

c. No post-graduate student shall be permitted to appear in the examination without the above certification.

(xi) Course in Cardiac Life Support Skills

a. All post-graduate students shall complete a course in Basic Cardiac Life Support (BCLS) and Advanced Cardiac Life Support (ACLS) skills to be conducted by the institution.

b. The students are expected to complete the course in the first year.

c. No post-graduate student shall be permitted to appear in the examination without the above certification.

(xii) Others - Institutions may arrange training in any other courses like awareness in medical audit, medical law, exposure to human behaviour studies, finance, accounts, etc, which are beneficial to the post graduate students.

(xiii) DISTRICT RESIDENCY PROGRAMME (DRP)

I. Preamble: Doctors have to be trained in diverse settings including those which are close to the community. Hence, they should be trained in the District Health System / the District Hospitals.

Provided that in respect of M.D./M.S. students admitted with effect from academic session 2021, the training imparted as part of the District Residency Programme, shall be considered as training imparted in a medical institution.

II. Objectives: The main objectives of the District Residency Programme (DRP) would be:

a. To expose the post-graduate student to the District Health System/ District Hospital and involve them in health care services being provided by District Health System /District Hospital for learning while serving;

b. To acquaint them with the planning, implementation, monitoring, and assessment of outcomes of the National Health programmes at the district level.

c. To orient them to promotive, preventive, curative and rehabilitative services being provided by various categories of healthcare professionals under the umbrella of the National Health Mission.

In doing so, the post-graduate medical students would also be contributing towards strengthening of services of the District Health System as Speciality resident doctors working as members of the district teams.

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 one 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 specialties/super specialties 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- 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 inter departmental learning activity**
- 5. External and Out reach 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 carryout 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 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 organized 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:** General Surgical Principles and Head- Neck Surgery.
- Paper IV:** Recent advances in Otolaryngology 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.

Scheme of theory examination for M.S. Otorhinolaryngology

Q. No. 1	Long Answer Question	20 marks
Q. No. 2	Long Answer Question	20 marks
Q. No. 3	Short Answer Question (10 marks each x 6)	60 marks
	Total	100 Marks

S. No.	Description	M. S.
1	THEORY	
	No. of Theory Paper	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
3	VIVA VOCE	100
	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 (Clinical / Practical – 280 marks; Dissertation / Thesis – 20 Marks; Viva voce – 100 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.	

Scheme of Practical Examination for M. S.**Pattern of Practical Examination for M. S.**

Seat No	Clinical Practical (300 Marks)			Viva (100 Marks)					Total 400	
	Long Case One (140 Mark s)	Short Cases Two (Each 70 Marks)		Dissertation 20 Marks)	Surgical Pathology (20 Marks)	Instruments (20 Marks)	X- ray , CT, MRI and Audiogram (20 Marks)	Osteology (20 Marks)		OSCE (20 Marks)
		140 Marks								
		I 70	II 70							

**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				

SIGNATURE OF ASSESSEE

SIGNATURE OF CONSULTANT

SIGNATURE OF HOD

DISSERTATION

1. The dissertation is compulsory for the candidates registered for M.S. (ENTHNS) and should include candidates own work under a supervisor qualified for the purpose and recognized as a postgraduate teacher by the university.
2. The subject of thesis along with a synopsis (about 200 words in the prescribed proforma) should be countersigned by the postgraduate teacher, head of the department and head of the institution. It should be submitted to the university within four months of registration as postgraduate student. No change in the dissertation topic or guide shall be made without prior approval of university.
3. The dissertation should be submitted under the following headings:
 - I. Introduction
 - II. Aims and objectives of the study
 - III. Review of literature
 - IV. Materials & methods
 - V. Observations
 - VI. Results
 - VII. Discussion
 - VIII. Conclusion
 - IX. Summary
 - X. Master chart
 - XI. References
4. If a work required for the thesis entails collaboration with other department or specialties, the collaborative portion of work will be supervised by a co-guide designated by the head of the institution. A co-guide should normally be a post graduate teacher in his own specialty, however, workers who have specialized in a particular field may be designated as co-guides by the Head of the institution. In cases where there is guide and co-guide for a thesis, the certificate required for submission of the thesis should be signed both guide and co-guide.
5. The subject of the thesis should as far as possible reflect the research priorities of the post graduate department where the work is being done. The department should provide all facilities to the candidate and the candidate should not be asked to spend money on chemicals instruments etc. The Dean, Commandant/Principal of the college while submitting the topic of the thesis to the university for approval should make sure that the institution provides all facilities for the research work. The candidate should submit to the university six monthly progress report of thesis and his other post graduate work.

through his Post-Graduate teacher, Head of the post graduate department and Head of institution.

6. If the progress of the candidate's work including thesis work is not satisfactory, the university on recommendation of the Head of the department, head of the institution and Dean of the faculty of medicine may not grant the particular term and the period of training will be extended by the number of terms not granted.
7. If there is a minor change in the topic of dissertation the same be allowed at any time. However if there is major change the student may be allowed to change without keeping additional terms provided there is an interval of three clear terms between the date of application and date of examination.
8. Lectures, Seminars, Journal club etc: The Post-graduate departments will organize lectures, seminars, symposia, tutorials, journal clubs, grand rounds and clinical meetings to keep the student abreast with the latest developments in the subject and ensure active participation by all PG students. 80% attendance is mandatory in these activities for grant of terms.
9. E Log Book : Each PG student shall maintain a logbook of all academic activities, surgeries assisted and performed independently on a monthly basis. This logbook shall be signed by the Guide and Head of the department with their remarks on the progress of the student. This Logbook shall be produced at the time of Final Practical Examination as a record of academic and surgical work performed by the student over his training period.

SCHEME OF EXAMINATION

A. THEORY EXAMINATION:

1. There shall be four theory papers in M.S. examinations, of 100 marks each.
2. There shall be three theory papers in Diploma examinations, of 100 marks each.

B. CLINICAL, ORAL AND PRACTICAL:

1. Consisting of long, short cases, instruments, x-rays, CT scans, MRI, specimens, spots, laboratory, Osteology, Audiology etc.
2. There will be 400 marks in clinical, oral and practical in M.S. examinations and 300 marks in Diploma examinations.

C. HEADS AND STANDARD OF PASSING:

1. There will be two heads of passing:-
 - (a) Four / three papers of theory shall form one head of passing and
 - (b) Clinical, oral and practical taken together shall form the second head of passing.
2. A candidate must pass on both the heads of passing that is the whole examination at one and the same attempt. A candidate passing in one head and failing to pass in the other head will be declared fail and shall not be entitled to any exemption in the head in which he / she has passed, in an examination taken subsequently.
3. To pass a candidate must obtain:-
 - (a) 50% of the total marks in theory examination
 - (b) 50% of the total marks in clinical, oral and practical taken together.
 - (c) In any of the papers in theory, he must not obtain less than 40 % marks to be declared pass. (Total of all the four/three paper show ever must be 50% of the total marks of the theory)
 - (d) Grand total is not head of passing.

MS (Oto-Rhino-Laryngology) Examination:

Paper I:	Basic Sciences related Otolaryngology
Paper II:	Principles and Practices of Otolaryngology
Paper III:	General Surgical Principles and Head- Neck Surgery.
Paper IV:	Recent advances in Otolaryngology and Head Neck surgery.

THEORY PAPER SETTING PATTERN:**Pattern: 4 papers of 100 marks each (I,II,III&IV)****Each papers shall have 3 questions.****Que-1 - Long Answer - 20Marks****Que-2 - Long Answer - 20Marks****Que - 3 - Write short answer on(10x6) - 60Marks****PATTERN OF PRACTICAL EXAMINATION****Otorhinolaryngology (ENT) Examination :Total 400 Marks**

- | | |
|---|---------------------|
| 1. One Long cases | : 140 Marks. |
| 2. Two Short Case | : 140 Marks |
| 3. Dissertation | : 20 Marks |
| 4. Surgical Pathology | : 20 Marks |
| 5. Instruments | : 20 Marks |
| 6. X-rays, CT, MRI & Audiology | : 20 Marks |
| 7. Osteology | : 20 Marks |
| 8. OSCE | : 20 Marks |

Total	: 400 Marks
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Theory + Practical Grand Total	: 800 Marks
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Recommended Books:

- 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




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