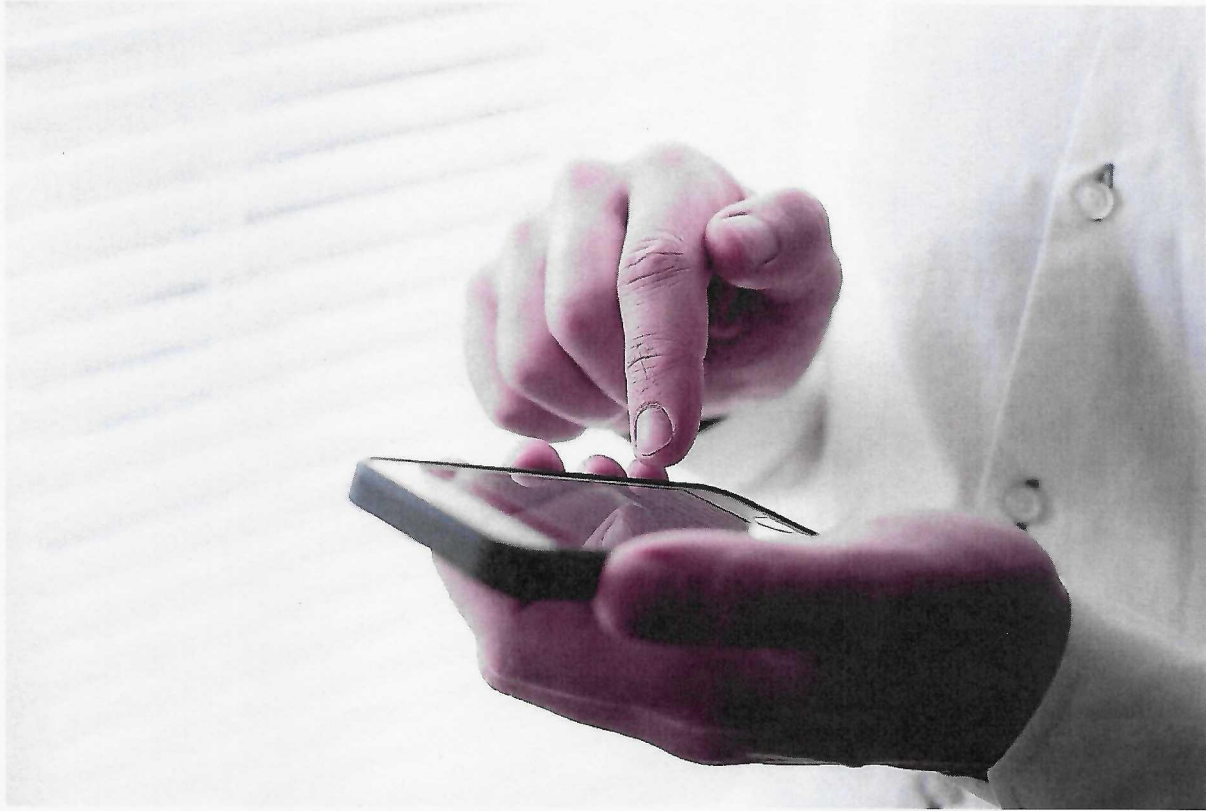


# Syllabus for MCh (Neurosurgery) Programme



**Guru Gobind Singh Indraprastha University**

A State University established by the Govt. of NCT of Delhi

**University School of Medicine and Allied Health Sciences**

## NEUROSURGERY — M Ch

### M Ch NEUROSURGERY 3 YEAR DEGREE COURSE

#### I. AIM OF TRAINING

After successful training the candidate should have acquired knowledge, skills, aptitude and attitudes to be able to function as an independent clinician/consultant and a teacher acquainted with research methodology.

#### OBJECTIVES -

The qualified candidate:-

1. Should be well acquainted with the current literature on relevant aspects of the basic, investigative, clinical and operative neurosciences.
2. Should have learned indications and performance skills of common neurosurgical operations.
3. Should have acquired performance skills and ability to interpret relevant clinical investigations.
4. Should be able to diagnose, plan investigations and treat common conditions in the speciality by relevant current therapeutic methods.
5. Should be acquainted with allied and general clinical disciplines to ensure appropriate and timely referral.
6. Should be capable of imparting basic neurosurgical training.
7. Should be able to identify, frame and carry out research proposals in the relevant speciality.

#### II. TRAINING SYSTEM

1. Exclusively on whole time in service basis.
2. The candidate should work as a Senior Resident for 3 years in the department of neurosurgery.

#### III. i) ELIGIBILITY CRITERIA:-

M S (Gen. Surgery only) degree of an Indian University recognized by the Medical Council of India or any other examination recognized for the purpose by the MCI.

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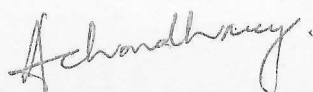
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Prof. L. A. Singh

- ii) MODE OF SELECTION – Once a year on All India basis based entirely on merit (by a written test).

#### IV. COURSE CONTENTS

- i) Clinical Neurosurgery including history taking, physical examination, diagnosis, selection and planning of relevant investigations, appropriate treatment and rehabilitation of patients with neurosurgical disorders including those presenting as emergencies.
- ii) Essentials of clinical Neurology especially with reference to disorders common in India and those likely to present to the Neurosurgeons.
- iii) Basic medical sciences relevant to the practice of Neurosurgery.
- iv) Surgical Neuropathology and the essentials of the Pathology of Neurological disorders likely to present to the Neurosurgeon.
- v) Performance and interpretation of Neuroradiological procedures, such as carotid arteriography and myelography, familiarity with the technique of selective arteriography, DSA and its interpretation.
- vi) Principles and interpretation of common Neurophysiological, Neuro-ophthalmological, Neurootological and Neuroendocrinological tests especially with reference to Neurosurgical disorders.
- vii) Principles and interpretation of computerized axial tomography, MRI and other modern investigations.
- viii) Performance of common neurosurgical operations in the supra and infra-tentorial compartments in the spinal canal and on the peripheral nerves – initially under supervision and later independently. Ability to use the operating microscope, drill, cusa and other gadgets. Performing emergency operation including neurotrauma.
- ix) Familiarity with various types of anaesthesia used in neurosurgery their indications and contraindications, the use of ventilators and techniques of monitoring and resuscitation.
- x) Pharmacology of various drugs used in Neurosurgery.
- xi) Knowledge of the history of neurological surgery and its allied disciplines with special reference to India.
- xii) Knowledge of recent advances in the field of neurological surgery.
- xiii) Preparation of papers for presentation at scientific conferences and for publication. Attending regional / national conferences, seminars, workshops.
- xiv) Introduction to the techniques involved in the organisation and development of a department, its subsections and newer facilities.

  
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- xv) It is desirable to have microsurgical laboratory training where candidates learn dissection/suturing of fine arteries/nerves under microscope and skull base dissections.
- xvi) Development of proper attitudes towards patients, subordinates, colleagues and seniors.
- xvii) Should have basic knowledge about application of computer and other information techniques.
- xviii) Management of neurological emergencies including neurotrauma.
- xix) General care of neurological patient and ICU Management.

#### V. METHODS OF TRAINING

1. Clinical teaching in the OPD, Emergency and Operation theatres. Clinical teaching rounds in Neurosurgery Ward and bed side presentations.
2. Seminars, journal clubs, mortality, morbidity meetings, case presentation.
3. Didactic lectures by faculty members and guest lectures.
4. Treatment planning sessions.
5. Assisting and performing neurosurgical operations.
6. Neuro-Anaesthesiology training -  
The major thrust in these would be the resuscitation management of coma, life-support systems and monitoring of patients. The Neurosurgery trainees would have additional requirements in which they should know the interaction of anaesthetic drugs with systemic diseases and neurosurgical disease conditions and for this few more didactic lecture would be required. The major thrust would be on continuing training for the Neurosurgery trainees in the operation theatre as a result of the informal discussions which would be taking place during the training period.
7. Neuroradiology meeting -  
Combined Neuroradiology meetings every week.
8. Clinical Neurology Neurophysiology -  
Candidates would have 2 months (1 month in the beginning and 1 month in the middle of course) training under Neurology department to familiarize themselves regarding common neurological disorders. During this period candidate should also familiarize themselves with the technique and interpretation of EEG/EMG/NCV and evoked potentials.
9. Neuropathology -  
There would be a regular once a month Neuropath meeting in which they should be familiarized with the techniques of grossing, staining procedures, brain cutting, autopsy methods and tissue processing including frozen sections and should be able to identify histological features of the common neurosurgical disorders.
10. Neuro-Biochemistry, Neuroimmunology seminars / lectures.

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11. Paper presentations at conferences.
12. Preparation of manuscript for publication.
13. Visit to other institutions -  
Candidate in 3rd year should visit other neurosurgical centers recognized by MCI for about 4 weeks to be able to observe difference in approaches to various neurosurgical problems. It is desirable to have training in certain special areas to be arranged outside the institute, when necessary like micro surgical lab training if not available within the department.

VI. ESSENTIAL PRE-REQUISITE FOR APPEARING FOR M Ch  
(NEUROSURGERY) EXAMINATION

1. Logbook of work done (surgical procedures performed/assisted case presentation and other academic activities): rotations, internal assessment report.
2. One project/prospective research related to neurosurgery /thesis completed in all respects for publication preferably published.
3. Attendance, as per laid down rules of the Institute.

VII. EVALUATION OF M Ch (NEUROSURGERY)

- a) Internal assessment – 20% weightage  
To be done by all teachers concerned in the training of the candidate both inside and outside the parent department independently and entered into log book on a standard marking system. The course director will average out and put the final evaluation.
- b) Theory examination – 30% weightage  
(Equally distributed for each paper)  
Minimum pass marks 50% in each paper.

Three Papers

Paper – I

Basic Applied Neurosciences including history, blood transfusion and coagulopathies.

Paper – II

Clinical Neurology and Neurosurgery.

Paper – III

Neurosurgery advances and operative neurosurgery.

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Recommended Books for Study:-

1. Youman's Neurological Surgery
2. Neurosurgery – Setti, S. Rengachari & R. H. Wilkins
3. Text Book of Neurosurgery - Ramamurthy & Tandon
4. Neurological Diagnosis – De'jong
5. Neurological differential diagnosis – John Patten
6. Core text of Neuroanatomy – Carpenter
7. Neuropathology – Russell & Rubenstein
8. Operative Neurosurgical Technique – Schmidek & Sweet

Journals:-

1. Neurosurgery – Red Journal
2. The Journal of Neurosurgery – White Journal
3. Neurosurgery Clinics of North America
4. Neurology India
5. Acta Neurochirurgica

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