Department of Neurology & Neuro-Surgery

S.No	Name of the Fellowship	Eligibility	Duration
01	Fellowship in Neurovascular Interventions	DM/DNB Neuro, Inter Radio, M.Ch/DNB Neuro Surg	1 yr
02	Fellowship in Movement Disorders & Deep Brain St (DBS)	DM/DNB Neuro, M.Ch/DNB in Neuro Surg	1 yr
03	Fellowship in Neuro Electro Physiology	DM/DNB Neuro	1 yr
04	Fellowship in Cognitive & Behavioural Neurology	DM/DNB Neuro	1 yr
05	Fellowship in Pediatric Neurosurgery	M.Ch/DNB Neuro Surgery	1 yr
06	Fellowship in Vascular Neuro Surgery	M.Ch./DNB Neuro Surg	1 yr
07	Fellowship in Minimal Invasive Neuro Surgery	MS/DNB Gen surg, M.Ch./DNB Neuro	1 yr
08	Fellowship in Skull Base Neuro Surgery	M.Ch./DNB Neuro Surg, Head & Neck Surg	1 yr

Fellowship in Neurovascular Interventions

Course Overview

The Fellowship in Neurovascular Interventions is a one-year advanced training program designed to provide specialized skills in the diagnosis and management of neurovascular diseases using minimally invasive endovascular techniques. The program focuses on cerebral angiography, embolization procedures, mechanical thrombectomy, stenting, and management of aneurysms, arteriovenous malformations (AVMs), and stroke interventions. The curriculum integrates theoretical knowledge, hands-on training, clinical exposure, and research projects.

Prerequisites

Criteria	Details
Eligibility	MBBS with MD/DNB in Radiology, Neurology, Neurosurgery, or DM in Neurointervention
Duration	1 Year (Full-Time)
Mode of Study	Clinical, Theoretical, Hands-on Training
Assessment	Theory, Practical Exams, Clinical Logbook, Research Project

Course Objectives

- Develop expertise in neurointerventional techniques, including embolization, mechanical thrombectomy, and angioplasty.
- Gain proficiency in diagnostic and therapeutic cerebral angiography.
- Master the management of aneurysms, arteriovenous malformations (AVMs), and ischemic stroke interventions.
- Learn advanced imaging techniques such as CT angiography and MR angiography.
- Understand patient selection, procedural planning, and post-procedural care in neurovascular interventions.
- Conduct research and apply evidence-based practices in neurointerventional procedures.

Curriculum with Semester-wise Syllabus & Modules

The one-year program is structured into two semesters covering theoretical concepts, clinical training, and research.

Semester 1: Fundamentals & Core Neurovascular Interventions

Module	Topics Covered
Principles of Neurovascular Interventions	Neuroanatomy, cerebrovascular physiology, patient selection criteria
Cerebral Angiography	Diagnostic techniques, vascular access, contrast agents
Stroke Interventions	Mechanical thrombectomy, thrombolysis, acute ischemic stroke management
Aneurysm Embolization	Coiling, flow-diverters, stent-assisted techniques
AVMs & Fistula Management	Embolization techniques, Onyx, glue, particle embolization
Clinical Rotations	Hands-on training in neurovascular procedures

Semester 2: Advanced Neurointerventional Techniques & Research

Module	Topics Covered
Carotid & Intracranial Stenting	Stent placement, balloon angioplasty, plaque management
Spinal Vascular Interventions	Spinal AVM embolization, vertebral artery dissection management
Complication Management & Rescue Strategies	Managing procedural complications, post-intervention care
Ethical & Medicolegal Considerations	Patient consent, risk management, malpractice prevention
Research Project & Case Studies	Literature review, patient case reports, dissertation submission

Program Outcomes

Program Outcome	Description
Expertise in Neurovascular Interventions	Perform advanced neurointerventional procedures for various neurovascular conditions.
Proficiency in Imaging & Angiography	Interpret and utilize advanced neuroimaging techniques.
Minimally Invasive Techniques	Apply catheter-based interventions for aneurysms, AVMs, and stroke.
Ethical & Legal Acumen	Ensure compliance with ethical and medicolegal considerations in neurovascular interventions.

Course Outcomes

Course Outcome	Description
Stroke & Aneurysm Management	Perform endovascular stroke interventions and aneurysm coiling.
Embolization Techniques	Gain expertise in AVM embolization and vascular malformation management.
Carotid & Intracranial Stenting	Master stent-assisted angioplasty techniques.
Complication Management	Develop strategies for handling procedural complications.

Credits & Assessment Methods

Total Credits: 40

Component	Credits
Theory & Lectures	10
Clinical Rotations & Case Studies	10
Hands-on Training & Procedures	10
Research & Dissertation	10

Assessment Pattern

Assessment Type	Weightage
Theory Examination (MCQs, Long & Short Answer)	30%
Clinical & Practical Exam (Case-Based Discussion, OSCE)	30%
Clinical Logbook & Case Reports	20%
Research Presentation & Dissertation	20%

Passing Criteria: Minimum 50% in each component to qualify.

Exam Pattern

Theory Examination

- **Section A** (MCQs – 30 Marks)
- **Section B** (Short Answer Questions – 30 Marks)
- **Section C** (Long Answer Questions – 40 Marks)

Practical Examination

Component	Details	Marks
Clinical Case Presentation	Diagnosis & Management of Neurovascular Cases	40
Endovascular Procedures	Catheterization, Embolization, Stenting	50
Imaging Interpretation	CT Angiography, MR Angiography, DSA	50
OSCE	Clinical Scenarios, Skill Demonstration	40

Viva Voce (Oral Examination) (Total: 100 Marks)

Component	Details	Marks
Case Presentations	Discussion on Neurovascular Cases	50
Recent Advances in Neurointervention	Journal Article Discussion	20
Ethical & Legal Considerations	Medical Ethics in Neurointervention	30

Research/Dissertation Submission (Total: 100 Marks)

Component	Marks
Originality & Scientific Merit	30
Methodology & Data Analysis	30
Presentation & Discussion	20
Conclusion & Clinical Relevance	20

Final Weightage & Passing Criteria

Exam Component	Total Marks	Minimum Passing Marks
Theory (Paper 1 & 2)	200	50% (100/200)
Practical Exam	200	50% (100/200)
Viva Voce	100	50% (50/100)
Dissertation	100	50% (50/100)
Total (Overall)	600	50% Aggregate Required

Recommended Books & E-Resources

Textbooks:

- Handbook of Neuroendovascular Surgery – Eric M. Deshaies
- Neurovascular Surgical Techniques – Pascal M. Jabbour
- Endovascular Neurosurgery – Vitor M. Pereira

Journals & E-Resources:

- Journal of NeuroInterventional Surgery – https://jnis.bmj.com/
- Neurosurgery Journal – https://academic.oup.com/neurosurgery
- World Federation of Interventional and Therapeutic Neuroradiology – https://www.wfitn.org/

Fellowship in Movement Disorders & Deep Brain Stimulation (DBS)

Course Overview

The **Fellowship in Movement Disorders & Deep Brain Stimulation (DBS)** is a one-year advanced training program aimed at equipping specialists with expertise in diagnosing and managing movement disorders such as Parkinson's disease, dystonia, essential tremors, and other hyperkinetic and hypokinetic disorders. The program emphasizes Deep Brain Stimulation (DBS) and other neuromodulatory techniques, integrating clinical training, surgical exposure, neurophysiological assessments, and research.

Prerequisites

Criteria	Details
Eligibility	MBBS with MD/DNB in Neurology / Neurosurgery / Internal Medicine / Psychiatry
Duration	1 Year (Full-Time)
Mode of Study	Clinical, Theoretical, Hands-on Training
Assessment	Theory, Practical Exams, Clinical Logbook, Research Project

Course Objectives

- Develop expertise in diagnosing and managing movement disorders using pharmacological and non-pharmacological approaches.
- Gain proficiency in Deep Brain Stimulation (DBS) techniques, patient selection, and surgical planning.
- Master neurophysiological assessments, including electromyography (EMG) and intraoperative microelectrode recording.
- Learn botulinum toxin therapy for dystonia, spasticity, and tremors.
- Understand the role of neuroimaging in movement disorder diagnosis and surgical planning.
- Conduct research in movement disorders and apply evidence-based clinical practices.

Curriculum with Semester-wise Syllabus & Modules

The one-year program is structured into two semesters covering theoretical concepts, clinical training, and research.

Semester 1: Fundamentals & Core Movement Disorders

Module	Topics Covered
Introduction to Movement Disorders	Classification, epidemiology, pathophysiology
Parkinson's Disease & Atypical Parkinsonism	Diagnosis, staging, pharmacotherapy, non-motor symptoms
Essential Tremors & Other Hyperkinetic Disorders	Pathophysiology, medical and surgical management
Neurophysiology of Movement Disorders	EMG, EEG, microelectrode recording
Botulinum Toxin Therapy	Indications, injection techniques, patient selection
Clinical Rotations	Movement disorder clinics, botulinum toxin clinics

Semester 2: Advanced Movement Disorder Management & DBS

Module	Topics Covered
Deep Brain Stimulation (DBS) - Fundamentals	Mechanism of action, patient selection, electrode targeting
Surgical Aspects of DBS	Preoperative planning, intraoperative monitoring, complications
DBS Programming & Follow-up	Stimulation settings, troubleshooting, long-term outcomes
Neuroimaging in Movement Disorders	MRI, PET scan, functional imaging
Ethical & Medicolegal Aspects	Informed consent, patient safety, ethical concerns
Research Project & Case Studies	Literature review, patient case reports, dissertation submission

Program Outcome

Outcome	Description
Proficiency in Movement Disorder Management	Diagnose and treat a range of movement disorders with medical and surgical interventions.
Expertise in DBS Procedures	Assist in DBS surgeries, programming, and postoperative care.
Neurophysiological & Neuroimaging Skills	Interpret EMG, EEG, and neuroimaging findings for patient assessment.
Botulinum Toxin Administration	Perform targeted botulinum toxin injections for movement disorders.

Course Outcome

Outcome	Description
Diagnosis of Movement Disorders	Gain expertise in Parkinsonism, tremors, dystonia, and other conditions.
Deep Brain Stimulation Techniques	Understand patient selection, surgical techniques, and post-op management.
Advanced Neurophysiology	Utilize EMG and microelectrode recording for diagnostic accuracy.
Neuroimaging Proficiency	Apply imaging in diagnosis, treatment planning, and surgical execution.

Credits & Assessment Methods

Total Credits: 40

Component	Credits
Theory & Lectures	10
Clinical Rotations & Case Studies	10
Hands-on Training & Procedures	10
Research & Dissertation	10

Assessment Pattern

Assessment Type	Weightage
Theory Examination (MCQs, Long & Short Answer)	30%
Clinical & Practical Exam (Case-Based Discussion, OSCE)	30%
Clinical Logbook & Case Reports	20%
Research Presentation & Dissertation	20%

Passing Criteria: Minimum 50% in each component to qualify.

Exam Pattern

Theory Examination

- **Section A:** MCQs (30 Marks)
- **Section B:** Short Answer Questions (30 Marks)
- **Section C:** Long Answer Questions (40 Marks)

Practical Examination

Component	Details	Marks
Clinical Case Presentation	Diagnosis & Management of Movement Disorders	40
DBS Surgery & Programming	Electrode targeting, device adjustments	50
Botulinum Toxin Therapy	Injection techniques, patient selection	50
OSCE	Clinical Scenarios, Skill Demonstration	40
Viva Voce (Oral Examination) (Total: 100 Marks)		
Case Presentations	Discussion on Movement Disorder Cases	50
Recent Advances in DBS	Journal Article Discussion	20
Ethical & Legal Considerations	Medical Ethics in Neurology	30

Research/Dissertation Submission (Total: 100 Marks)

Component	Marks
Originality & Scientific Merit	30
Methodology & Data Analysis	30
Presentation & Discussion	20
Conclusion & Clinical Relevance	20

Final Weightage & Passing Criteria

Exam Component	Total Marks	Minimum Passing Marks
Theory (Paper 1 & 2)	200	50% (100/200)
Practical Exam	200	50% (100/200)
Viva Voce	100	50% (50/100)
Dissertation	100	50% (50/100)
Total (Overall)	600	**50% Aggregate Required**

Additional Notes

- Candidates scoring **75% and above** will be awarded **"Distinction."**
- Failure in Practical or Viva: Candidates must reappear for the failed component in the next cycle.

Recommended Books & E-Resources

Textbooks:

- Principles and Practice of Movement Disorders – Stanley Fahn
- Deep Brain Stimulation Management – William Anderson
- Botulinum Toxin Therapy Manual – Joseph Jankovic
- Atlas of EMG & Movement Disorders – Mark Hallett

Journals & E-Resources:

- **Movement Disorders Journal** – https://movementdisorders.onlinelibrary.wiley.com/
- **Journal of Neural Engineering** – https://iopscience.iop.org/journal/1741-2552
- **Neurology (AAN Journal)** – https://n.neurology.org/

Fellowship in Neuro Electrophysiology

Course Overview

The Fellowship in Neuro Electrophysiology is a one-year intensive program designed to train healthcare professionals in advanced neurophysiological techniques. The course focuses on electroencephalography (EEG), nerve conduction studies (NCS), electromyography (EMG), evoked potentials (EP), intraoperative neurophysiological monitoring (IONM), and clinical applications of neurophysiological assessments. It includes clinical rotations, hands-on training, and research projects.

Prerequisites

Criteria	Details
Eligibility	MBBS with MD/DNB in Neurology / Neurophysiology / Clinical Neurophysiology / Physiology / Internal Medicine
Duration	1 Year (Full-Time)
Mode of Study	Clinical, Theoretical, Hands-on Training
Assessment	Theory, Practical Exams, Clinical Logbook, Research Project

Course Objectives

- Develop expertise in the interpretation and clinical application of neurophysiological tests.
- Gain proficiency in performing EEG, EMG, NCS, and EP techniques.
- Learn the principles of intraoperative neurophysiological monitoring (IONM).
- Master the diagnosis of neuromuscular disorders using electrophysiology.
- Understand the integration of neurophysiological data in clinical decision-making.
- Conduct research in neuro electrophysiology and apply evidence-based practices.

Curriculum with Semester-wise Syllabus & Modules

The one-year program is structured into two semesters, covering theoretical concepts, clinical training, and research.

Semester 1: Fundamentals & Core Neurophysiology

Module	Topics Covered
Principles of Neurophysiology	Neuronal signaling, electrophysiological concepts, instrumentation
Electroencephalography (EEG)	Normal & abnormal EEG patterns, seizure detection
Nerve Conduction Studies (NCS)	Peripheral nerve assessment, conduction velocity analysis
Electromyography (EMG)	Needle EMG techniques, motor unit potential analysis

Module	Topics Covered
Evoked Potentials (EP)	VEP, SSEP, BAEP, MEP principles & clinical applications
Clinical Rotations	Hands-on experience in EEG, NCS, EMG, EP

Semester 2: Advanced Neurophysiology & Special Cases

Module	Topics Covered
Advanced EEG & Seizure Monitoring	Long-term EEG, video EEG, ICU EEG monitoring
Intraoperative Neurophysiological Monitoring (IONM)	Spinal cord, brainstem, and cranial nerve monitoring
Neuromuscular Disorders & Electrophysiology	ALS, myasthenia gravis, peripheral neuropathies
Pediatric & Neonatal Neurophysiology	Neonatal EEG, pediatric EMG, congenital disorders
Ethical & Medicolegal Aspects	Patient consent, safety regulations, malpractice prevention
Research Project & Case Studies	Literature review, patient case reports, dissertation submission

Program Outcomes

Program Outcome	Description
Expertise in Neurophysiology	Perform and interpret EEG, EMG, NCS, and EP studies.
Advanced IONM Skills	Utilize intraoperative monitoring to prevent neurological deficits.
Diagnosis of Neuromuscular Disorders	Apply electrophysiological tests for accurate diagnoses.
Research & Evidence-Based Practices	Conduct research and integrate findings into clinical practice.

Course Outcomes

Course Outcome	Description
EEG & Seizure Monitoring	Interpret EEG for epilepsy and encephalopathy cases.
NCS & EMG Techniques	Diagnose peripheral nerve and muscle disorders.
Evoked Potentials	Assess sensory and motor pathways using EP techniques.
IONM & Surgical Applications	Monitor neurophysiological function during surgeries.

Credits & Assessment Methods
Total Credits: 40

Component	Credits
Theory & Lectures	10
Clinical Rotations & Case Studies	10
Hands-on Training & Procedures	10
Research & Dissertation	10

Assessment Pattern

Assessment Type	Weightage
Theory Examination (MCQs, Long & Short Answer)	30%
Clinical & Practical Exam (Case-Based Discussion, OSCE)	30%
Clinical Logbook & Case Reports	20%
Research Presentation & Dissertation	20%

Passing Criteria: Minimum 50% in each component to qualify.

Exam Pattern
Theory Examination

- Section A (MCQs – 30 Marks)
- Section B (Short Answer Questions – 30 Marks)
- Section C (Long Answer Questions – 40 Marks)

Practical Examination

Component	Details	Marks
Clinical Case Presentation	Diagnosis & Management of Neurophysiology Cases	40
EEG & Seizure Monitoring	Hands-on assessment of EEG interpretation	50
NCS & EMG Techniques	Hands-on skill demonstration	50
OSCE	Clinical Scenarios, Skill Demonstration	40

Viva Voce (Oral Examination) (Total: 100 Marks)

Component	Details	Marks
Case Presentations	Discussion on Neurophysiology Cases	50
Recent Advances in Neurophysiology	Journal Article Discussion	20
Ethical & Legal Considerations	Medical Ethics in Neurophysiology	30

Research/Dissertation Submission (Total: 100 Marks)

Component	Marks
Originality & Scientific Merit	30
Methodology & Data Analysis	30
Presentation & Discussion	20
Conclusion & Clinical Relevance	20

Final Weightage & Passing Criteria

Exam Component	Total Marks	Minimum Passing Marks
Theory (Paper 1 & 2)	200	50% (100/200)
Practical Exam	200	50% (100/200)
Viva Voce	100	50% (50/100)
Dissertation	100	50% (50/100)
Total (Overall)	600	50% Aggregate Required

Additional Notes

- To pass the fellowship, a minimum of 50% marks in each section (Theory, Practical, Viva, and Dissertation) is required.
- Distinction: Candidates scoring 75% and above will be awarded "Distinction."
- Failure in Practical or Viva: If a candidate fails in the practical or viva, they must reappear for the failed component in the next examination cycle.

Recommended Books & E-Resources
Textbooks:

- Electroencephalography: Basic Principles, Clinical Applications, and Related Fields – Niedermeyer & da Silva
- Clinical Neurophysiology: A Practical Approach – Devon I. Rubin
- Electrodiagnosis in Diseases of Nerve and Muscle – Preston & Shapiro
- Evoked Potentials in Clinical Medicine – Misulis & Head
- Intraoperative Neurophysiological Monitoring – Aage R. Møller

Journals & E-Resources:

- Clinical Neurophysiology – https://www.journals.elsevier.com/clinical-neurophysiology
- Journal of Clinical Neurophysiology – https://journals.lww.com/clinicalneurophysiology
- European Journal of Neurology – https://onlinelibrary.wiley.com/journal/14681331
- International Federation of Clinical Neurophysiology – https://www.ifcn.info/

Fellowship in Cognitive & Behavioural Neurology

Course Overview

The Fellowship in Cognitive & Behavioural Neurology is a one-year specialized program designed to train healthcare professionals in the assessment, diagnosis, and management of cognitive and behavioral disorders. The course covers neurodegenerative diseases, neuropsychiatric conditions, cognitive rehabilitation, neuroimaging techniques, and emerging therapies. The program integrates clinical training, research, and hands-on experience in neurocognitive assessment and interventions.

Prerequisites

Criteria	Details
Eligibility	MBBS with MD/DNB in Neurology / Psychiatry / Internal Medicine
Duration	1 Year (Full-Time)
Mode of Study	Clinical, Theoretical, Hands-on Training
Assessment	Theory, Practical Exams, Clinical Logbook, Research Project

Course Objectives

- Develop expertise in diagnosing and managing cognitive and behavioral neurological disorders.
- Gain proficiency in neurocognitive assessments and neuropsychological testing.
- Master the use of neuroimaging and electrophysiological techniques in cognitive disorders.
- Learn cognitive rehabilitation strategies and behavioral therapy approaches.
- Understand the neurobiology and genetics of neurodegenerative diseases.
- Conduct research in cognitive and behavioral neurology and apply evidence-based practices.

Curriculum with Semester-wise Syllabus & Modules

The one-year program is structured into two semesters covering theoretical concepts, clinical training, and research.

Semester 1: Fundamentals & Core Cognitive Neurology

Module	Topics Covered
Principles of Cognitive Neurology	Brain-behavior relationships, neuroanatomy of cognition
Neurocognitive Assessments	Standardized tests, MMSE, MoCA, ADAS-Cog
Neurodegenerative Disorders	Alzheimer's, Parkinson's, Frontotemporal dementia
Neuropsychiatric Disorders	Depression, anxiety, schizophrenia with cognitive impairment
Neuroimaging &	MRI, PET, fMRI, EEG applications in cognition

Module	Topics Covered
Electrophysiology	
Clinical Rotations	Hands-on experience in cognitive clinics

Semester 2: Advanced Cognitive & Behavioral Neurology

Module	Topics Covered
Advanced Dementia Syndromes	Vascular dementia, Lewy body dementia
Movement Disorders & Cognition	Parkinson's disease, Huntington's disease
Cognitive Rehabilitation & Therapy	Pharmacological & non-pharmacological approaches
Genetics & Biomarkers in Cognitive Disorders	Genetic testing, CSF biomarkers
Ethical & Medicolegal Aspects	Capacity assessment, consent issues, ethics in dementia care
Research Project & Case Studies	Literature review, patient case reports, dissertation submission

Program Outcomes

Program Outcome	Description
Expertise in Cognitive Neurology	Diagnose and manage various cognitive and behavioral neurological disorders.
Advanced Neurocognitive Assessment	Conduct and interpret neuropsychological and cognitive assessments.
Proficiency in Neuroimaging & EEG	Utilize imaging techniques for diagnosing cognitive impairments.
Cognitive Rehabilitation Mastery	Implement evidence-based rehabilitation strategies.
Ethical & Medicolegal Acumen	Ensure compliance with ethical standards in cognitive neurology.

Course Outcomes

Course Outcome	Description
Cognitive Disorder Diagnosis	Gain expertise in assessing and diagnosing dementia and related conditions.
Neuropsychiatric Disorder Management	Understand the overlap between neurology and psychiatry in cognitive disorders.
Neuroimaging & Electrophysiology Skills	Develop proficiency in EEG, MRI, and PET for cognitive evaluation.
Cognitive Rehabilitation	Learn pharmacological and non-pharmacological

Course Outcome	Description
Techniques	interventions.
Genetics & Biomarkers Application	Interpret genetic tests and biomarker data for cognitive disorders.

Credits & Assessment Methods
Total Credits: 40

Component	Credits
Theory & Lectures	10
Clinical Rotations & Case Studies	10
Hands-on Training & Procedures	10
Research & Dissertation	10

Assessment Pattern

Assessment Type	Weightage
Theory Examination (MCQs, Long & Short Answer)	30%
Clinical & Practical Exam (Case-Based Discussion, OSCE)	30%
Clinical Logbook & Case Reports	20%
Research Presentation & Dissertation	20%

Passing Criteria: Minimum 50% in each component to qualify.

Exam Pattern
Theory Examination

- Section A (MCQs – 30 Marks)
- Section B (Short Answer Questions – 30 Marks)
- Section C (Long Answer Questions – 40 Marks)

Practical Examination

Component	Details	Marks
Clinical Case Presentation	Diagnosis & Management of Cognitive Disorders	40
Neurocognitive Testing	Hands-on assessment with standardized tools	50
Neuroimaging & EEG Interpretation	MRI, PET, EEG analysis	50
OSCE	Clinical Scenarios, Skill Demonstration	40

Viva Voce (Oral Examination)

(Total: 100 Marks)

Component	Details	Marks
Case Presentations	Discussion on Cognitive Neurology Cases	50
Recent Advances in Cognitive Neurology	Journal Article Discussion	20
Ethical & Legal Considerations	Medical Ethics in Dementia Care	30

Research/Dissertation Submission

(Total: 100 Marks)

Component	Marks
Originality & Scientific Merit	30
Methodology & Data Analysis	30
Presentation & Discussion	20
Conclusion & Clinical Relevance	20

Final Weightage & Passing Criteria

Exam Component	Total Marks	Minimum Passing Marks
Theory (Paper 1 & 2)	200	50% (100/200)
Practical Exam	200	50% (100/200)
Viva Voce	100	50% (50/100)
Dissertation	100	50% (50/100)
Total (Overall)	**600**	**50% Aggregate Required**

Additional Notes

- Candidates must secure a minimum of 50% in each section (Theory, Practical, Viva, and Dissertation) to pass.
- **Distinction**: Candidates scoring 75% and above will be awarded "Distinction."
- **Re-exam Policy**: Candidates failing in Practical or Viva must reappear in the next examination cycle.

Recommended Books & E-Resources
Textbooks:

- Principles of Behavioral and Cognitive Neurology – M.-Marsel Mesulam
- The Dementias: Diagnosis, Treatment, and Research – Serge Gauthier
- Neuropsychological Assessment – Muriel D. Lezak
- The Cognitive Neurosciences – Michael S. Gazzaniga
- Handbook of Neuropsychology – François Boller

Journals & E-Resources:

- Journal of Cognitive Neuroscience – https://www.mitpressjournals.org/journal/jocn
- Alzheimer's & Dementia Journal – https://alz-journals.onlinelibrary.wiley.com/
- Neuropsychologia – https://www.sciencedirect.com/journal/neuropsychologia

Fellowship in Pediatric Neurosurgery

Course Overview

The **Fellowship in Pediatric Neurosurgery** is a one-year intensive program designed to provide specialized training in the diagnosis, surgical management, and postoperative care of pediatric neurosurgical conditions. The fellowship focuses on congenital and acquired disorders of the brain, spine, and peripheral nerves in neonates, infants, children, and adolescents. The program includes clinical rotations, hands-on surgical training, simulation-based learning, and research projects.

Prerequisites

Criteria	Details
Eligibility	MBBS with MS/DNB in General Surgery or MCh/DNB in Neurosurgery
Duration	1 Year (Full-Time)
Mode of Study	Clinical, Theoretical, Hands-on Training
Assessment	Theory, Practical Exams, Clinical Logbook, Research Project

Course Objectives

- Develop expertise in pediatric neurosurgical procedures and perioperative management.
- Gain proficiency in neuroimaging interpretation and diagnosis of pediatric neurosurgical conditions.
- Master microsurgical techniques and minimally invasive approaches in pediatric neurosurgery.
- Learn comprehensive management of congenital CNS malformations, hydrocephalus, and neuro-oncology cases.
- Understand surgical interventions for epilepsy, spasticity, and craniofacial anomalies.
- Enhance decision-making, critical care, and rehabilitation strategies in pediatric neurosurgery.
- Conduct research and contribute to advancements in pediatric neurosurgical practices.

Curriculum with Semester-wise Syllabus & Modules

The one-year program is structured into two semesters, covering theoretical concepts, clinical training, and research.

Semester 1: Fundamentals & Core Pediatric Neurosurgery

Module	Topics Covered
Principles of Pediatric Neurosurgery	Neurodevelopment, neuroanatomy, pathophysiology
Pediatric Neuroimaging	MRI, CT, ultrasound, functional imaging
Hydrocephalus & CSF Disorders	Shunting procedures, endoscopic third ventriculostomy (ETV)
Congenital Malformations	Spina bifida, Chiari malformations, craniosynostosis
Pediatric Neurotrauma	Management of TBI, skull fractures, spinal injuries
Clinical Rotations – OR & ICU	Hands-on patient care experience

Semester 2: Advanced Pediatric Neurosurgery & Critical Procedures

Module	Topics Covered
Pediatric Neuro-Oncology	Brain tumors, spinal cord tumors, surgical resection techniques
Epilepsy Surgery	Cortical mapping, hemispherectomy, vagal nerve stimulation (VNS)
Spasticity & Movement Disorders	Selective dorsal rhizotomy (SDR), deep brain stimulation (DBS)
Pediatric Spinal Disorders	Tethered cord syndrome, scoliosis, spinal dysraphism
Ethical & Legal Aspects	Informed consent, pediatric medico-legal considerations
Research Project & Case Studies	Literature review, patient studies, dissertation submission

Program Outcomes

Program Outcome	Description
Proficiency in Pediatric Neurosurgery	Perform surgical management for various pediatric neurosurgical conditions.
Advanced Neuroimaging Interpretation	Utilize imaging for diagnosis, preoperative planning, and intraoperative guidance.
Expertise in Hydrocephalus & CSF Disorders	Master techniques like ventriculoperitoneal shunting and ETV.
Pediatric Neuro-Oncology Surgery	Develop skills in tumor resection, stereotactic biopsy, and adjuvant therapies.
Surgical Management of Epilepsy	Execute cortical resections and neuromodulation procedures.

Course Outcomes

Course Outcome	Description
Pediatric Neurosurgical Techniques	Learn advanced surgical management for congenital and acquired conditions.
Neuroimaging & Diagnosis	Gain expertise in MRI, CT, and intraoperative imaging.
Minimally Invasive Neurosurgery	Develop proficiency in endoscopic and stereotactic techniques.
Cranial & Spinal Procedures	Understand surgical approaches for congenital and acquired spinal anomalies.
Pediatric Neurosurgical Rehabilitation	Manage postoperative care and neurorehabilitation strategies.

Credits & Assessment Methods

Total Credits: 40

Component	Credits
Theory & Lectures	10
Clinical Rotations & Case Studies	10
Hands-on Training & Procedures	10
Research & Dissertation	10

Assessment Pattern

Assessment Type	Weightage
Theory Examination (MCQs, Long & Short Answer)	30%
Clinical & Practical Exam (Case-Based Discussion, OSCE)	30%
Clinical Logbook & Case Reports	20%
Research Presentation & Dissertation	20%

Exam Pattern

Theory Examination

- Section A (MCQs – 30 Marks)
- Section B (Short Answer Questions – 30 Marks)
- Section C (Long Answer Questions – 40 Marks)

Practical Examination

Component	Details	Marks
Clinical Case Presentation	Diagnosis & Management of Pediatric Neurosurgical Cases	40
Surgical Techniques	Endoscopic, Open, and Minimally Invasive Procedures	50
Neuroimaging Interpretation	MRI, CT Scan, Ultrasound	30
OSCE	Clinical Scenarios, Skill Demonstration	40
Cranial & Spinal Surgery Simulation	Neurosurgical Approaches	40

Viva Voce (Oral Examination) (Total: 100 Marks)

Component	Details	Marks
Case Presentations	Discussion on Pediatric Neurosurgical Cases	50
Recent Advances in Pediatric Neurosurgery	Journal Article Discussion	20
Ethical & Legal Considerations	Medico-Legal Ethics in Pediatric Neurosurgery	30

Research/Dissertation Submission (Total: 100 Marks)

Component	Marks
Originality & Scientific Merit	30
Methodology & Data Analysis	30
Presentation & Discussion	20
Conclusion & Clinical Relevance	20

Final Weightage & Passing Criteria

Exam Component	Total Marks	Minimum Passing Marks
Theory (Paper 1 & 2)	200	50% (100/200)
Practical Exam	200	50% (100/200)
Viva Voce	100	50% (50/100)
Dissertation	100	50% (50/100)
Total (Overall)	**600**	**50% Aggregate Required**

Additional Notes

- To pass the fellowship, a minimum of 50% marks in each section (Theory, Practical, Viva, and Dissertation) is required.
- **Distinction:** Candidates scoring 75% and above will be awarded "Distinction."
- **Failure in Practical or Viva:** Candidates failing in practical or viva must reappear for the failed component in the next examination cycle.

Recommended Books & E-Resources

Textbooks:

- **Pediatric Neurosurgery** – James Tait Goodrich
- **Youmans Pediatric Neurosurgery** – H. Richard Winn
- **Neurosurgery of Infants and Children** – Anthony J. Raimondi
- **Principles of Pediatric Neurosurgery** – A. Leland Albright, Ian F. Pollack
- **Handbook of Pediatric Neurosurgery** – George I. Jallo

Journals & E-Resources:

- Journal of Neurosurgery: Pediatrics – https://thejns.org/pediatrics
- Pediatric Neurosurgery – https://www.karger.com/Journal/Home/224170
- Child's Nervous System – https://www.springer.com/journal/381

Fellowship in Vascular Neurosurgery

Course Overview

The Fellowship in Vascular Neurosurgery is a one-year specialized training program designed to equip neurosurgeons with expertise in diagnosing and managing cerebrovascular disorders. The course focuses on both open and endovascular neurosurgical techniques for conditions such as aneurysms, arteriovenous malformations (AVMs), ischemic strokes, and other neurovascular diseases. It includes hands-on surgical training, clinical rotations, simulation-based practice, and research opportunities.

Prerequisites

Criteria	Details
Eligibility	MCh/DNB in Neurosurgery
Duration	1 Year (Full-Time)
Mode of Study	Clinical, Theoretical, Hands-on Training
Assessment	Theory, Practical Exams, Clinical Logbook, Research Project

Course Objectives

- Develop proficiency in open microsurgical and endovascular techniques for vascular neurosurgery.
- Gain expertise in perioperative management of cerebrovascular patients.
- Master techniques for aneurysm clipping, AVM resection, and bypass procedures.
- Learn and perform advanced endovascular procedures like coiling, stenting, and embolization.
- Understand neurocritical care principles and post-operative monitoring in vascular cases.
- Conduct research in vascular neurosurgery and apply evidence-based practices.

Curriculum with Semester-wise Syllabus & Modules

The one-year program is structured into two semesters, covering theoretical concepts, clinical training, and research.

Semester 1: Fundamentals & Core Vascular Neurosurgery

Module	Topics Covered
Principles of Vascular Neurosurgery	Cerebrovascular anatomy, pathophysiology, and imaging
Open Vascular Neurosurgery	Aneurysm clipping, AVM resection, bypass surgery
Endovascular Neurosurgery	Catheter-based interventions, embolization, stenting
Ischemic Stroke Management	Carotid stenosis, thrombectomy techniques, medical therapy
Neurocritical Care	Perioperative monitoring, post-operative management
Clinical Rotations – OR & ICU	Hands-on patient care experience

Semester 2: Advanced Vascular Neurosurgery & Complex Procedures

Module	Topics Covered
Advanced Aneurysm Management	Giant aneurysms, flow-diversion, hybrid procedures
Pediatric Vascular Neurosurgery	Moyamoya disease, pediatric aneurysms, AVMs
Spinal Vascular Disorders	Spinal dural AV fistulas, AVMs
Stroke and Revascularization	Extracranial-intracranial (EC-IC) bypass
Ethical & Legal Aspects	Informed consent, medico-legal considerations
Research Project & Case Studies	Literature review, patient studies, dissertation submission

Program Outcomes

Program Outcome	Description
Proficiency in Vascular Neurosurgery	Perform surgical and endovascular interventions for cerebrovascular diseases.
Expertise in Open & Endovascular Techniques	Develop skills in microsurgery, aneurysm clipping, embolization, and stenting.
Advanced Neurocritical Care	Manage perioperative care, hemodynamic stability, and stroke protocols.
Research & Innovation	Conduct clinical research, case studies, and apply evidence-based approaches.

Course Outcomes

Course Outcome	Description
Aneurysm & AVM Management	Master surgical and endovascular techniques for aneurysms and AVMs.
Stroke Intervention	Perform endovascular thrombectomy and bypass techniques for stroke patients.
Neurovascular Imaging & Diagnosis	Interpret DSA, CTA, MRI, and MRA for cerebrovascular diseases.
Hybrid Vascular Neurosurgery	Integrate open and endovascular procedures in complex cases.

Credits & Assessment Methods

Total Credits: 40

Component	Credits
Theory & Lectures	10
Clinical Rotations & Case Studies	10
Hands-on Training & Procedures	10
Research & Dissertation	10

Assessment Pattern

Assessment Type	Weightage
Theory Examination (MCQs, Long & Short Answer)	30%
Clinical & Practical Exam (Case-Based Discussion, OSCE)	30%
Clinical Logbook & Case Reports	20%
Research Presentation & Dissertation	20%

Passing Criteria: Minimum 50% in each component to qualify.

Exam Pattern

Theory Examination

- **Section A (MCQs – 30 Marks)**
- **Section B (Short Answer Questions – 30 Marks)**
- **Section C (Long Answer Questions – 40 Marks)**

Practical Examination

Component	Details	Marks
Clinical Case Presentation	Diagnosis & Management of Vascular Neurosurgery Cases	40
Advanced Microsurgical Techniques	Aneurysm Clipping, AVM Resection	50
Endovascular Procedures	Coiling, Stenting, Embolization	50
OSCE	Clinical Scenarios, Skill Demonstration	40
Bypass Surgery	EC-IC, STA-MCA Bypass	40

Viva Voce (Oral Examination) (Total: 100 Marks)

Component	Details	Marks
Case Presentations	Discussion on Vascular Neurosurgery Cases	50
Recent Advances in Vascular Neurosurgery	Journal Article Discussion	20
Ethical & Legal Considerations	Medical Ethics in Neurosurgery	30

Research/Dissertation Submission (Total: 100 Marks)

Component	Marks
Originality & Scientific Merit	30
Methodology & Data Analysis	30
Presentation & Discussion	20
Conclusion & Clinical Relevance	20

Final Weightage & Passing Criteria

Exam Component	Total Marks	Minimum Passing Marks
Theory (Paper 1 & 2)	200	50% (100/200)
Practical Exam	200	50% (100/200)
Viva Voce	100	50% (50/100)
Dissertation	100	50% (50/100)
Total (Overall)	**600**	**50% Aggregate Required**

Additional Notes

- To pass the fellowship, a minimum of 50% marks in each section (Theory, Practical, Viva, and Dissertation) is required.
- **Distinction:** Candidates scoring 75% and above will be awarded "Distinction."
- **Failure in Practical or Viva:** If a candidate fails in the practical or viva, they must reappear for the failed component in the next examination cycle.

Recommended Books & E-Resources

Textbooks:

- **Cohen-Gadol's Comprehensive Vascular Neurosurgery**
- **Rhoton's Cranial Anatomy and Surgical Approaches**
- **Spetzler's Neurosurgical Operative Atlas: Vascular Neurosurgery**
- **Endovascular Surgical Neuroradiology – Vinuela et al.**
- **Microsurgical Anatomy and Surgery of the Central Skull Base – Al-Mefty**

Journals & E-Resources:

- **Journal of Neurosurgery** – https://thejns.org/
- **Stroke (AHA)** – https://www.ahajournals.org/journal/str
- **Neurosurgery Journal** – https://academic.oup.com/neurosurgery
- **World Neurosurgery** – https://www.worldneurosurgery.org/
- **Cerebrovascular Surgery E-Library** – https://www.eneurovascular.com/

Fellowship in Minimal Invasive Neurosurgery

Course Overview

The Fellowship in Minimal Invasive Neurosurgery is a one-year intensive program designed to train healthcare professionals in advanced techniques for minimally invasive neurosurgical procedures. The program covers endoscopic, keyhole, and microsurgical approaches for cranial and spinal conditions, integrating cutting-edge technology and patient-centered care. It includes clinical rotations, simulation training, and research projects.

Prerequisites

Criteria	Details
Eligibility	MBBS with MCh/DNB in Neurosurgery
Duration	1 Year (Full-Time)
Mode of Study	Clinical, Theoretical, Hands-on Training
Assessment	Theory, Practical Exams, Clinical Logbook, Research Project

Course Objectives

- Develop expertise in minimally invasive neurosurgical techniques.
- Gain proficiency in endoscopic and keyhole neurosurgical approaches.
- Learn the use of neuronavigation and intraoperative imaging.
- Master advanced microsurgical skills.
- Understand patient selection and perioperative management for minimally invasive procedures.
- Enhance decision-making and procedural skills.
- Conduct research in minimally invasive neurosurgery and apply evidence-based practices.

Curriculum with Semester-wise Syllabus & Modules

The one-year program is structured into two semesters, covering theoretical concepts, clinical training, and research.

Semester 1: Fundamentals & Core Techniques

Module	Topics Covered
Principles of Minimally Invasive Neurosurgery	Introduction, history, and advancements in the field
Endoscopic Neurosurgery	Endoscopic techniques for skull base and ventricular procedures
Keyhole Neurosurgery	Supraorbital, retrosigmoid, and other approaches

Module	Topics Covered
Spinal Minimal Invasive Surgery	Tubular retraction, percutaneous fixation, endoscopic discectomy
Neuro-navigation & Imaging	Intraoperative imaging, neuronavigation techniques
Clinical Rotations – OR & ICU	Hands-on patient care experience

Semester 2: Advanced Procedures & Specialized Applications

Module	Topics Covered
Advanced Endoscopic Surgery	Endonasal approaches, third ventriculostomy, pituitary surgeries
Minimally Invasive Spinal Surgery	MISS techniques, lateral and oblique approaches
Perioperative & Postoperative Management	Patient selection, complication management
Robotics & Artificial Intelligence	Technological advancements in neurosurgery
Ethical & Legal Aspects	Informed consent, medico-legal considerations
Research Project & Case Studies	Literature review, patient studies, dissertation submission

Program Outcomes

Program Outcome	Description
Proficiency in Minimal Invasive Neurosurgery	Perform endoscopic, keyhole, and minimally invasive spinal procedures.
Expertise in Neuronavigation & Imaging	Utilize real-time imaging for precision in neurosurgical procedures.
Advanced Microsurgical Techniques	Master microdissection and anastomosis under high magnification.
Robotics & AI in Neurosurgery	Integrate emerging technologies in neurosurgical interventions.
Research & Innovation	Conduct evidence-based research and contribute to neurosurgical advancements.

Course Outcomes

Course Outcome	Description
Endoscopic Neurosurgery	Master endoscopic approaches for cranial and spinal procedures.
Keyhole Neurosurgery	Gain expertise in keyhole surgeries for skull base and brain tumors.
Advanced Spinal Surgery	Learn minimally invasive approaches for spinal decompression and fusion.
Neuronavigation & Robotics	Implement precision-guided neurosurgical techniques.
Research & Case Studies	Develop research proficiency and contribute to scientific publications.

Credits & Assessment Methods

Total Credits: 40

Component	Credits
Theory & Lectures	10
Clinical Rotations & Case Studies	10
Hands-on Training & Procedures	10
Research & Dissertation	10

Assessment Pattern

Assessment Type	Weightage
Theory Examination (MCQs, Long & Short Answer)	30%
Clinical & Practical Exam (Case-Based Discussion, OSCE)	30%
Clinical Logbook & Case Reports	20%
Research Presentation & Dissertation	20%

Passing Criteria: Minimum 50% in each component to qualify.

Exam Pattern

Theory Examination

- Section A (MCQs – 30 Marks)
- Section B (Short Answer Questions – 30 Marks)
- Section C (Long Answer Questions – 40 Marks)

Practical Examination

Component	Details	Marks
Clinical Case Presentation	Diagnosis & Management of Minimally Invasive Cases	40
Endoscopic & Keyhole Surgery	Hands-on Practical Techniques	50
Neuronavigation & Imaging	Application in Surgery	30
OSCE	Clinical Scenarios, Skill Demonstration	40
Spinal MISS Procedures	Simulation & Real-Case Scenarios	40

Viva Voce (Oral Examination)

(Total: 100 Marks)

Component	Details	Marks
Case Presentations	Discussion on Minimally Invasive Neurosurgery Cases	50
Recent Advances	Journal Article Discussion	20
Ethical & Legal Considerations	Medical Ethics in Neurosurgery	30

Research/Dissertation Submission

(Total: 100 Marks)

Component	Marks
Originality & Scientific Merit	30
Methodology & Data Analysis	30
Presentation & Discussion	20
Conclusion & Clinical Relevance	20

Final Weightage & Passing Criteria

Exam Component	Total Marks	Minimum Passing Marks
Theory (Paper 1 & 2)	200	50% (100/200)
Practical Exam	200	50% (100/200)
Viva Voce	100	50% (50/100)
Dissertation	100	50% (50/100)
Total (Overall)	**600**	**50% Aggregate Required**

Additional Notes

- A minimum of 50% marks in each section (Theory, Practical, Viva, and Dissertation) is required to pass.
- **Distinction:** Candidates scoring 75% and above will be awarded "Distinction."
- **Failure in Practical or Viva:** Candidates must reappear for the failed component in the next examination cycle.

Recommended Books & E-Resources

Textbooks:

- "Endoscopic Cranial Base and Pituitary Surgery" – Daniel M. Prevedello
- "Minimally Invasive Neurosurgery" – Anthony L. Asher
- "Microneurosurgery" – Mahmut Gazi Yaşargil
- "Spine Surgery: Tricks of the Trade" – Alexander R. Vaccaro
- "Neurosurgical Operative Atlas" – Setti S. Rengachary

Journals & E-Resources:

- Journal of Neurosurgery – https://thejns.org/
- World Neurosurgery – https://www.sciencedirect.com/journal/world-neurosurgery
- Neurosurgical Review – https://www.springer.com/journal/10143
- WFNS – https://www.wfns.org/
- AANS – https://www.aans.org/

Fellowship in Skull Base Neurosurgery

Course Overview

The Fellowship in Skull Base Neurosurgery is a one-year intensive program designed to train healthcare professionals in the specialized surgical management of skull base pathologies. The course focuses on minimally invasive and open approaches, neurovascular techniques, microsurgery, endoscopic interventions, and critical care management. It includes clinical rotations, hands-on training, and research projects.

Prerequisites

Criteria	Details
Eligibility	MBBS with MCh/DNB in Neurosurgery
Duration	1 Year (Full-Time)
Mode of Study	Clinical, Theoretical, Hands-on Training
Assessment	Theory, Practical Exams, Clinical Logbook, Research Project

Course Objectives

- Develop expertise in the surgical management of skull base tumors and vascular lesions.
- Gain proficiency in perioperative patient care and advanced imaging techniques.
- Learn microsurgical and endoscopic approaches to skull base surgery.
- Master the use of intraoperative navigation and neurophysiological monitoring.
- Understand skull base anatomy and surgical corridors.
- Enhance decision-making and procedural skills in complex skull base cases.
- Conduct research in skull base neurosurgery and apply evidence-based practices.

Curriculum with Semester-wise Syllabus & Modules The one-year program is structured into two semesters, covering theoretical concepts, clinical training, and research.

Semester 1: Fundamentals & Core Skull Base Neurosurgery

Module	Topics Covered
Skull Base Anatomy & Imaging	Radiological techniques, 3D reconstructions, preoperative planning
Microsurgical Techniques	Instrumentation, suturing, dissection techniques
Endoscopic Skull Base Surgery	Basic endoscopic approaches, transnasal corridors
Neurovascular Surgery	Aneurysm clipping, bypass techniques, AVM management
Clinical Rotations – OR & ICU	Hands-on patient care experience

Semester 2: Advanced Skull Base Neurosurgery & Critical Procedures

Module	Topics Covered
Tumor Surgery	Meningiomas, schwannomas, pituitary tumors
Cranial Nerve Disorders	Management of trigeminal neuralgia, hemifacial spasm
Complex Skull Base Approaches	Combined approaches, petroclival lesions
Neurovascular Interventions	Skull base aneurysms, dural AV fistulas
Ethical & Legal Aspects	Informed consent, medical negligence
Research Project & Case Studies	Literature review, patient studies, dissertation submission

Program Outcomes

Outcome	Description
Proficiency in Skull Base Surgery	Perform complex neurosurgical procedures involving the skull base.
Advanced Imaging & Navigation	Interpret radiological findings and utilize neuronavigation tools.
Expertise in Neurovascular Techniques	Manage vascular skull base pathologies using microsurgical and endoscopic methods.
Intraoperative Monitoring & Navigation	Apply neurophysiological monitoring for improved surgical precision.
Tumor & Cranial Nerve Surgery	Execute intricate surgical procedures involving tumors and cranial nerve disorders.

Course Outcomes

Outcome	Description
Skull Base Surgical Techniques	Master various skull base approaches for tumor and vascular lesions.
Microsurgery & Endoscopy	Gain expertise in microsurgical and endoscopic techniques for skull base pathologies.
Neurovascular Interventions	Learn advanced techniques for treating aneurysms, AVMs, and bypass procedures.
Cranial Nerve Surgery	Develop proficiency in surgical management of cranial nerve compression syndromes.
Advanced Patient Management	Handle perioperative care and critical interventions in skull base neurosurgery.

Credits & Assessment Methods

Total Credits: 40

Component	Credits
Theory & Lectures	10
Clinical Rotations & Case Studies	10
Hands-on Training & Procedures	10
Research & Dissertation	10

Assessment Pattern

Assessment Type	Weightage
Theory Examination (MCQs, Long & Short Answer)	30%
Clinical & Practical Exam (Case-Based Discussion, OSCE)	30%
Clinical Logbook & Case Reports	20%
Research Presentation & Dissertation	20%

Passing Criteria: Minimum 50% in each component to qualify.

Exam Pattern

Theory Examination

- Section A (MCQs – 30 Marks)
- Section B (Short Answer Questions – 30 Marks)
- Section C (Long Answer Questions – 40 Marks)

Practical Examination

Component	Details	Marks
Clinical Case Presentation	Diagnosis & Management of Skull Base Cases	40
Microsurgical & Endoscopic Techniques	Instrumentation, Skill Demonstration	50
Neurovascular Interventions	Aneurysm clipping, bypass techniques	30
OSCE	Clinical Scenarios, Skill Demonstration	40
Tumor Excision Simulation	Skull Base Tumor Resection	40

Viva Voce (Oral Examination) (Total: 100 Marks)

Component	Details	Marks
Case Presentations	Discussion on Skull Base Surgery Cases	50
Recent Advances in Skull Base Surgery	Journal Article Discussion	20
Ethical & Legal Considerations	Medical Ethics in Neurosurgery	30

Research/Dissertation Submission (Total: 100 Marks)

Component	Marks
Originality & Scientific Merit	30
Methodology & Data Analysis	30
Presentation & Discussion	20
Conclusion & Clinical Relevance	20

Final Weightage & Passing Criteria

Exam Component	Total Marks	Minimum Passing Marks
Theory (Paper 1 & 2)	200	50% (100/200)
Practical Exam	200	50% (100/200)
Viva Voce	100	50% (50/100)
Dissertation	100	50% (50/100)
Total (Overall)	**600**	**50% Aggregate Required**

Additional Notes

- To pass the fellowship, a minimum of 50% marks in each section (Theory, Practical, Viva, and Dissertation) is required.
- Distinction: Candidates scoring 75% and above will be awarded "Distinction."
- Failure in Practical or Viva: If a candidate fails in the practical or viva, they must reappear for the failed component in the next examination cycle.

Recommended Books & E-Resources

Textbooks:

- "Skull Base Surgery: Strategies" – Robert F. Spetzler
- "Microsurgical Anatomy of the Skull Base" – Albert L. Rhoton Jr.
- "Endoscopic Skull Base Surgery" – Ricardo L. Carrau
- "Neurosurgical Operative Atlas: Skull Base Surgery" – Laligam N. Sekhar
- "Atlas of Skull Base Surgery and Neurotology" – Robert K. Jackler

Journals & E-Resources:

- Journal of Neurosurgery – https://thejns.org/
- Skull Base Journal – https://www.thieme.com/
- World Neurosurgery – https://www.worldneurosurgery.org/
- Neurosurgery Journal – https://academic.oup.com/neurosurgery
- Congress of Neurological Surgeons – https://www.cns.org/