



**PRAVARA INSTITUTE OF MEDICAL SCIENCES  
(DEEMED TO BE UNIVERSITY)**

Loni, Tal. Rahata, Dist. Ahmednagar 413736  
NAAC Re-accredited with 'A' Grade

**SYLLABUS**

**Post Doctoral Fellowship in Diagnostic Neuro Radiology (Dept. of Radiodiagnosis)  
(Academic Council Meeting Dated 25<sup>th</sup> August, 2022)**

**TOPIC**

Fellowship in Diagnostic Neuro-Radiology

**INTRODUCTION & OBJECTIVE**

**Awarded by:** Pravara Institute Of Medical Sciences (DU) (accredited by NAAC with 'A' GRADE)

**Program Highlights:-**

- A one year comprehensive and well-balanced training program encompassing all the subjects in Diagnostic neuroradiology.
- The fellow receives "hands-on" experience at the workstation as well as through active procedure services.
- The program provides advanced training in all neuroimaging modalities including conventional MRI and CT, as well as advanced neuroimaging like MR perfusion, MR spectroscopy, diffusion tensor imaging, arterial spin labeling, MR CSF flow study, functional MRI, MRA and MRV, CT perfusion, CT angiography and venography.
- Fellows receive comprehensive training in all aspects of adult and pediatric neuroimaging, head and neck imaging.
- Fellows will be given an opportunity to conduct/participate in at least one original research study during the course duration.
- Oral/Poster presentation as part of course syllabus at a local/regional/national/international meeting.

**DURATION OF COURSE**

1 year

**ELIGIBILITY**

- Applicant possesses either a degree or diploma/DNB qualification in Radiodiagnosis.
- Applicant is registered with Maharashtra/State Medical Council/MCI and possesses additional qualification registration certificate or has applied for the same.

**INTAKE CAPACITY**

Three (3) Students per Academic year

## FEE STRUCTURE

The candidate will be asked to pay Rs.1,50,000/- by Demand draft in favor of Pravara Institute of Medical Sciences, with prescribed application form at the time of admission towards the Fellowship in Diagnostic Neuro-Radiology. They will be paid salary/stipend as per the pay scale of senior Resident Rs. 80,000/-

## COURSE CONTENT / TOPICS / LEARNING METHODS

### MRI sessions

Reporting scans and reviewing them with consultant including

#### 1. Brain assessment:

- In trauma.
- In stroke
- In metabolic disorders
- Developmental disorders
- In infections.
- In Neurodegenerative disorders.
- Pediatric brain.
- In space occupying lesions

#### 2. Spine

- Trauma.
- Congenital anomalies
- Degenerative spine.
- Dural and cord lesions.
- Post operative spine.
- Infections.

#### 3. Head and neck

#### 4. PNS

#### 5. Orbit

#### 6. Cranial nerves

#### 7. Peripheral nerves

**Advanced neuro-imaging:** MR perfusion, MR spectroscopy, diffusion tensor imaging, arterial spin labeling, functional MRI, MRA and MRV.

Responsible for:

- Guiding technologist in planning the scan
- Tailoring the scan protocol in the given clinical scenario
- Reviewing scans for optimum image quality
- Responsible for managing emergency add-ons
- Making special films demonstrating positive findings in interesting cases
- Ensuring quality and adequacy of all films provided to clinicians
- Patient counseling.

**CT (CNS/ H&N component) sessions**

- Weekly reporting scans for
  - Brain
    - In trauma.
    - In stroke
    - In metabolic disorders
    - Developmental disorders
    - In infections.
    - In Neurodegenerative disorders.
    - Pediatric brain.
    - In space occupying lesions
  - Sinuses
  - Head and neck
- Spine
  - Trauma.
  - Congenital anomalies
  - Degenerative spine.
  - Dural and cord lesions.
  - Post operative spine.
  - Infections.

**Advanced neuro-imaging:** CT perfusion, CTA, CTV, CT myelogram.

**USG sessions:**

- B scan
- Pediatric NSG
- Percutaneous pain management.

**Neurointervention:**

- Diagnostic arteriography
- Thrombolysis
- Embolization
- Percutaneous central venous access.
- Intracranial aneurysmal coiling.
- Cerebral AVM embolization.

**Topics for Discussion Includes:**

1. Congenital Malformations of the Brain and the Skull
2. Inborn errors of metabolism
3. Cerebrovascular diseases and Malformations
4. Adult demyelinating, metabolic and toxic encephalopathies
5. Supratentorial tumors
6. Pineal Region Tumors

7. Sellar and Parasellar Tumors
8. Infratentorial Tumors
9. Tumors of the Meninges
10. Head Trauma
11. Hydrocephalus
12. Intracranial Infections
13. Toxic and Metabolic Disorders
14. Neurodegenerative Disorders of the Central Nervous System including parkinson plus, dementias, etc.
15. Spine and Spinal Cord Tumors

#### AVAILABLE MACHINES AND EQUIPMENTS

PHILIPS Ingenia Elition 3.0 T MRI

128 Slice CT Scan with Syngovia Software and CO2 Insufflators for virtual imaging

10 color Doppler machines of Toshiba, Philips and Mindray

Digital X-ray with IITV

PACS

Updated Central & Departmental Library with Latest Books, Journals & Reading Hall

Film Library with All types of Cases in films and CD's

Well Equipped seminar room with AV aids and LCD projector

#### PROJECT WORK

Seminar presentation

Case Presentation

Journal Club

Paper presentation:- The candidate will be encouraged to attend conferences and workshops and to present as many papers at these conferences.

Publications:- All facilities will be given to acquire and record data to send articles for publications in journals of national and international repute. Each candidate will be encouraged to send in at least one article for publication in a certificate course.

#### LOG BOOK

Student will have to maintain a log book

#### SCHEME OF EXAMINATION

##### **Evaluation:-**

Term end examination will be arranged and conducted by Dept. of Radiodiagnosis, Dr. Balasaheb Vikhe Patil Rural Medical College and declare the result.

##### **Examination Scheme**

Paper - I: Post Doctoral Fellowship in Diagnostic Neuro Radiology - I

Paper - II: Recent advances in Post Doctoral Fellowship in Diagnostic Neuro Radiology

**Theory Examination:- (2 Paper of 100 marks each)**

2 LAQ x 20 Marks = 40 Marks

6 SAQ x 10 Marks = 60 Marks

**Practical Examination:-**

One Long Case / Long experiments = 50 Marks

Three Short Cases (3 x 30) = 90 Marks

Viva Voce / Oral / OSPE / Spottes = 60 Marks

**Minimum Passing:-**

- i) Minimum 50% in Theory papers (Each paper minimum is 40%)
- ii) Minimum 50% in Practical / Clinical & Viva Voce
- iii) Overall 50% Theory & Practical/Clinical

**Award of class:-**

50% to 59.5% = II<sup>nd</sup> class

60 to 74.5% = I<sup>st</sup> Class

Above 75% = I<sup>st</sup> Class with Distinction

**Attempts:-**

- A student shall clear the Examination only within three attempts or within 4 years of admission.
- Result / Issue of Mark Sheet – Head of Institute & HOD will jointly issue the Mark Sheet.

**Certification:-**

- A) Title – Post Doctoral Fellowship in Diagnostic Neuro Radiology.
- B) A fellowship is awarded upon successful completion of the prescribed study program, which will state that i) Candidate has completed the prescribed course of Post Doctoral Fellowship in Diagnostic Neuro Radiology, ii) Candidate has completed prescribed clinical experience. iii) Candidate has passed the prescribed examination.
- C) Certificate will be issued with the signatures of concern Dean, Dr. Balasaheb Vikhe Patil Rural Medical College & Vice-Chancellor, Pravara Institute of Medical Sciences (Deemed to be University).
- D) Certificates to be prepared by concern College.

**COURSE COMMENCES**

1<sup>st</sup> September

## REFERENCE FOR THE BOOK

### Books (latest edition)

1. Grainger & Allison's Text book of Diagnostic Radiology (Churchill Livingstone)
2. Textbook of Gastrointestinal Radiology- Gore and Levine (Saunders)
3. MRI of Brain and Spine - Scott Atlas (LWW)
4. Diagnosis of Diseases of the Chest -Fraser
5. Diagnostic Imaging Series: (Amirsys, Elsevier)  
Abdominal Imaging, Orthopedics, Head and Neck, Neuroradiology, Pediatric Radiology Chest, Obstetrics, Breast
6. MRI in Orthopedics and Sport Injuries - Stoller
7. Skeletal Radiology - Greenspan
8. Abdominal-Pelvic MRI - Semelka (IWW)
9. Caffey's Pediatric Radiology
10. CTI and MRI of the whole body- John R. Haaga
11. Text Book of Radiology and imaging - Davodsulton
12. Diagnostic ultrasound - Carol C. Rumack
13. AIIMS-MAMC-PGI's Comprehensive Textbook of Diagnostic Radiology, Volumes 1, 2, 3

### Journals

1. American Journal of Roentgenology
2. Radiology
3. Seminars in Ultrasound, CT, MRI
4. Radiographics
5. Clinical Radiology
6. British Journal of Radiology
7. Radiological Clinics of North America
8. Pediatric Radiology
9. Australasian Radiology
10. Journal of Computerized Axial Tomography
11. Clinical Imaging
12. MR Clinics of North America
13. Seminars in Roentgenology

**Pravara Institute of Medical Sciences  
Deemed University (DU),Loni  
Department of Radiodiagnosis, Rural Medical College  
At Po-Loni,Tal-Rahata,Dist-Ahmednagar,413736**

**APPLICATION FORM FOR ADMISSION TO FELLOWSHIP PROGRAMME**

RECENT  
PASSPORTSIZE  
PHOTOGRAPH

I desire to take admission for the Fellowship Program in \_\_\_\_\_  
at Pravara Institute of Medical Sciences Loni. I hereby apply for the same. If permitted to  
join the course, I shall abide by all the rules and regulations of the University. I hereby  
furnish my Bio-data.

Date of Application \_\_\_\_\_ Date of Receipt \_\_\_\_\_

(By Office) Signature of Applicant

1. Name(in capitals) : \_\_\_\_\_  
(Surname) ( First Name) (Middle Name)
2. Father's Name : \_\_\_\_\_
3. Mother's Name : \_\_\_\_\_
4. Age : \_\_\_\_\_ Gender: \_\_\_\_\_
5. Date of Birth : \_\_\_\_\_
6. Postal Address for Correspondence: \_\_\_\_\_
7. \_\_\_\_\_
8. Telephone No. : \_\_\_\_\_ Mobile No. : \_\_\_\_\_  
(with Area Code)
9. E-mail ID : \_\_\_\_\_
10. Nationality : \_\_\_\_\_

11. Educational Qualification:

EXAM	MONTH AND YEAR OF PASSING	NAME OF UNIVERSITY	% MARKS OBTAINED
M.B.B.S			
M.D			
DMRE			
OTHERS			

Registration No. : \_\_\_\_\_

Name of State Medical Council : \_\_\_\_\_

Country : \_\_\_\_\_

City : \_\_\_\_\_

A-State/National/International Conference Attended:

Year	Place	State/National/International

B-Papers Presented as first author at State/National/International Conference:

Year	Place	Title

C-Papers Published in any recognized Journal /chapters in textbook/articles

Name of the Publication	Year	Vol. No.	Page No.	Title of the Paper/chapter/article



To be filled by the University Office

Serial No. \_\_\_\_\_ Date when applicant & payment received \_\_\_\_\_

Amount Rs. \_\_\_\_\_ by cash/ cheque /Draft \_\_\_\_\_

Receipt No. \_\_\_\_\_ Date \_\_\_\_\_

Date when application is approved \_\_\_\_\_

Remarks \_\_\_\_\_

**Manager Accounts PIMS**

**DECLARATION:**

I hereby agree that I will abide by the rules and regulations at present in force or that may hereafter be made for the administration of Pravara Institute of Medical Sciences Deemed University (DU), Loni and undertake that so long as I am a fellow / certificate course student of the university, I will do nothing unworthy of the student of the university either inside or outside or anything that will interfere with its orderly working and discipline. I also declare that the information particulars furnished above by me are true to the best of my knowledge. I know the consequences as provided in the rules of PIMS with regard to furnishing false information/concealing any information.

Date: \_\_

\_\_\_\_\_  
Signature of Applicant



  
Registrar  
Pravara Institute of Medical Sciences  
(Deemed to be University)  
Loni-413736, Tal Rahata, Dist. Ahmednagar  
(M.S. India)