M.D. RADIODIAGNOSIS

[Syllabus Approved by Board of Studies, Medical & Health Sciences]

Programme Code	**:**	HLTH09A03
Programme Details	**:**	MD RADIODIAGNOSIS
Programme Learning Outcomes (PLOs / PSOs)	**:**	ATTACHED
Eligibility Criteria	**:**	**AS PER NMC NORMS**
Duration of the Course	**:**	3 YEARS
Programme Structure (Credit-Based)	**:**	NA
Detailed Course Syllabus	**:**	ATTACHED
Teaching–Learning Methodologies	**:**	3 YEARS RESIDENCY PROGRAM
Examination & Evaluation System	**:**	ANNUAL APPRAISALS FOLLOWED BY FINAL YEAR EXAMINATION AS PER NMC NORMS
Internship / Project / Dissertation Guidelines	**:**	1 YEAR MANDATORY BOND
Program In Charge	**:**	HEAD, DEPT OF RADIODIAGNOSIS
Annexure (Books / Journals etc)	**:**	ANNEXUED

M.D. (RADIO-DIAGNOSIS)

Programme Code: **HLTH09A03**

Programme Outcome:

- To train the residents for wholesome approach to clinical scenario and attaining the diagnosis. And to contribute in therapeutic management wherever indicated.
- Application of the knowledge gained, in service and research.
- To be able to participate and contribute in the disease management group discussion in approaching particular case.
- To understand the need to identify emergency scenario and prompt reporting to help in patient management.
- Encourage and guide the students for various paper and case presentations.
- The candidate should complete the necessary training and mandatory theory as specified in the syllabus of the MD course.
- To participate and excel in the appraisal exams held each year of both theory and practical.
- To learn the need and importance of multidisciplinary approach in patient management.
- To attend and participate in lectures, case discussions and contribute value adding points.
- Provide adequate exposure to interventional radiology and nuclear medicine to give wholesome training.

PROGRAMME CIRRICULUM

GOAL

The goal of the course is to orient and train the students on different aspects of diagnostic and interventional radiology in the diseases of various organ systems of the human body. They should be able to apply this training at secondary and tertiary level of medical care.

OBJECTIVES

In order to achieve the goal of this course, following objectives are to be accomplished by the time the candidate completes the 3 years course.

Three broad domains of the objectives are:

- Cognitive domain (Knowledge)
- Psychomotor domain (Skills)
- Attitudinal domain (Human values, ethical practice etc.)

Cognitive Domain (Knowledge)

- Describe etiology, pathophysiology, and principles of diagnosis and management of common problems including emergencies, in adults and children.
- Demonstrate understanding of basic sciences relevant to this special
  - Identify important determinants in a case (e.g. social, economic, environmental) and take them into account for planning therapeutic measures.
  - Recognize conditions that may be outside the area of specialty/competence and to refer them to proper specialist or ask for help.
- Advise regarding the management (including interventional radiology) of the case and to carry out the management effectively
- Update oneself by self-study and by attending courses, seminars, conferences and workshops which are relevant to the field of radio-diagnosis .Carry out guided research with the aim of publishing his/her work and presenting work at various scientific fora.

Psychomotor Domain (Skills)

- Take a proper clinical history, examine the patient, perform essentialdiagnostic/ interventional procedures and interpret the results to come to a reasonable diagnosis
-

or differential diagnosis in the condition.

- Provide basic life-saving support service in emergency situations.Undertake complete patient monitoring including the care of the patient.

Attitudinal Domain

- Adopt ethical principles in all aspects of his/her practice. Professional honesty and integrity is to be fostered.
- Develop communication skills in order to explain the various options available in management and to obtain true informed consent from the patient.
- Be humble and accept the limitations of his/her knowledge and skills and to ask for help from colleagues/seniors when needed.
- Respect patient rights and privileges including patient's right to information and right to seek a second opinion

COURSE CONTENT

BASIC SCIENCES RELATED TO RADIO-DIAGNOSIS

- Radiation physics and Radio-Biology
- Radiological anatomy and pathology of various organ systems
- Imaging Techniques
- Radiography

Includes all aspects of Fundamentals of

- Electromagnetic radiation, X-ray production, Characteristic properties of X-rays, Units of radiation, Radiation measurement, X-ray equipment, X-ray films, Intensifying screens, Other X-ray appliances, Dark room equipment and procedures,

II-TV, Cine fluorography, Tomography.Quality assurance

- Radiation hazards and principles and methods of radiation protection
- Contrast media – types, chemistry, mechanisms of action, dose schedule, routes of administration, their potential adverse reactions and management

- Clinical applications of important isotopes and instrumentation in Nuclear Medicine with advances in both
  - Physics and applications of advanced imaging i.e. Ultrasound, CT, MRI, Angiography(DSA), PET etc.
  - Practical experiments in radiological physics – a list of experiments which a resident should be able to do and interpret, as available in the department including quality assurance and tests for radiological equipment.

RESPIRATORY SYSTEM

Goal

At the completion of the course the resident should be able to interpret conventional and advanced (CT, MRI) chest examinations, differentiate normal from abnormal cases and be able to recognize specific imaging patterns of different diseases.

Content Coverage

Diseases of the chest wall, diaphragm, pleura and airways; pulmonary infections; pulmonary vasculature; pulmonary neoplasms; diffuse lung disease; mediastinal disease; chest trauma; post-operative lung and X-rays in intensive care.

Essential Objectives

- Should be able to localize the chest pathology into one of the following compartments: pulmonary, pleural, mediastinal, extra-pleural, extra-thoracic, diaphragmatic, infradiaphragmatic.
- Recognize chest pathology that requires urgent or emergency treatment and describe this in an adequate manner: pneumothorax, traumatic aortic rupture, esophageal rupture, acute pulmonary embolism, CHF and tracheo-bronchial foreign bodies.
- Recognize acute and chronic patterns of bacterial and viral pneumonias, occupational diseases, allergic states.
- Recognize acute and chronic cardiac failure patterns and non-cardiogenic edemas. Understand the radiographic features and precipitating causes of adult and infant respiratory distress syndrome.

- Recognize and describe appropriately the various manifestations of benign and malignant neoplasms of the lung.

- **Evaluation**

Annual assessment by an outside expert.

- Resident's progress through daily observation of work
- At the end of the rotation, an assessment by a small group of faculty
- Maintain a log book showing techniques learnt during the rotation — to be upervised
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3. GASTROINTESTINAL (GIT) AND HEPATO-BILIARY-PANCREATIC SYSTEM

- **Goal**

At the completion of this course the resident should be able to interpret both the conventional and newer (ultrasound, CT, MRI, angiography) examinations. This includes examination of GIT i.e. esophagus, upper gastrointestinal study, follow-through for small bowel (including small bowel enteroclysis) and enema (both conventional and double contrast) for colon.

It also includes examination of liver, biliary system and pancreas using all the imaging modalities available to a radiologist including specialized investigations like MRCP, PTC and assist and perform interventional procedures like abscess drainage, Percutaneous Transhepatic Biliary Drainage (PTBD – internal and external), tumor embolization, Radiofrequency (RF) ablation, etc.

During this posting resident also performs other investigations done using fluoroscopic guidance e.g. hysterosalpingography (HSG), fistulogram, sinogram, T-tube cholangiography, sialography, etc., and he/she should be able to perform and interpret studies using these modalities.

- **Content Coverage**

Diseases and disorders of mouth, pharynx, salivary glands, esophagus, stomach, small intestine, large intestine, diseases of omentum, peritoneum and mesentery; acute abdomen, abdominal trauma using conventional and newer imaging methods like CT, MRI, DSA, isotope studies.

Diseases and disorders of hepato-biliary-pancreatic system using conventional and newer imaging methods.

- **Essential Objectives**

- Learn to evaluate the clinical condition and needs of a patient and to decide the appropriate studies and approach for examining the GIT or hepato-biliary-pancreatic system of a patient.
- Learn a proper approach to fluoroscopy; this includes developing proficiency in GIT fluoroscopy, mastering the equipment and using proper radiation protection measures (both for the patient and the operator).
- Learn the basic pathology and pathophysiology of GIT/hepato-biliary-pancreatic diseases.
- Learn to communicate the findings both at fluoroscopy and in films, in an accurate, succinct and meaningful way.

- **Evaluation**

Annual assessment by an outside expert.

- Day-to-day observation of residents' work including documentation and interpretation
- Assessment by a group of faculty at the end of the rotation
- Log book will be maintained of the procedures learnt

4. GENITO-URINARY SYSTEM

- **Goal**

At the completion of this course residents should be able to perform, direct the radiography and interpret the conventional radiological examinations of the urinary tract. These include: excretory urography(intravenous pyelography) cystograms, micturating cystourethrography (MCU) and retrograde urethrography (RGU).

In addition the resident should be able to perform and interpret other diagnostic imaging modalities and procedures which are used to evaluate urinary tract pathology i.e.

ultrasound, CT, MRI, angiography, as well as various interventional procedures like percutaneous nephrostomy, kidney biopsy, stent placement, antegrade pyelography, tumor embolization, etc.

- **Content Coverage**

Imaging: conventional, ultrasound, CT, MRI, angiography of various diseases and disorders of the genito-urinary system. These include: congenital, inflammatory, traumatic, neoplastic, calculus and miscellaneous conditions.

- **Essential Objectives**

- Recognize and evaluate emergency conditions involving the urinary tract including trauma, infection, vascular compromise and obstruction.
- Recognize and understand the patho-physiology of stone disease.
- Recognize patterns of infectious diseases and the modalities necessary for diagnostic evaluation.

  Understand the complete evaluation of renal mass lesions and the evaluation of other urinary tract neoplasms, including the detection and staging of the tumor.
- Recognize the difference between the pattern of diseases affecting the genito-urinary tract of adults and that of children and understand and identify the common conditions affecting the pediatric genito-urinary system on imaging.

- **EVALUATION**

Annual assessment by an outside expert.

- Day-to-day, based on daily work assessment
- By a group of faculty at the end of the posting
- Maintain a log book

5. MUSCULOSKELETAL SYSTEM

- **Goal**

At the end of the course the resident should be able to correctly interpret all the common abnormalities of the bones and joints. He/She should have a good understanding of the common

congenital abnormalities, arthritis, bone and joint trauma, neoplastic conditions, metabolic bone disease and inflammatory diseases.

He/She should also have an understanding of the role of CT/MRI in all these conditions and should be able to perform and interpret CT/MRI in diseases of the musculo-skeletal system.

- **Content Coverage**

Imaging (conventional, ultrasound, CT, MRI, angiography, radio-isotope studies) and interpretation of diseases of muscles, soft tissue, bones and joints including congenital, inflammatory, traumatic, neoplastic and miscellaneous conditions.

- **Essential Objectives**
  - Communicate precisely and cogently radiographic descriptions of bone and joint trauma.
  - Differentiate various forms of arthritis and know correlative laboratory and clinical findings.
  - Enumerate the radiographic features that differentiate benign and malignant bone tumors with a basic familiarity of more common tumors.
    Know radiographic features of acute and chronic osteomyelitis and discitis (including tuberculosis).
  - Recognize differential features of osteoporosis (including Bone Mineral Density or BMD assessment techniques e.g. US, CT, DEXA) including various endocrine and metabolic diseases e.g. osteomalacia, hyperparathyroidism, etc.
  - Know the application and interpretation of ultrasound/CT/MRI/angiography in one or more of the above situations.

- **Evaluation**

Annual assessment by an outside expert.

- Through daily session assessment
- By a small group of faculty at the end of the posting
- Will maintain a log book

6. CARDIOVASCULAR RADIOLOGY

- **Goal**

  To provide experience in the role of imaging in cardiovascular diseases by different techniques including Cardiac CT, Cardiac MRI and Nuclear medicine studies.

- **Content Coverage**

  Diseases and disorders of the cardiovascular system including congenital conditions and the role of imaging by:

  - Conventional ultrasound
  - Color Doppler
  - CT
  - MRI
  - Angiography (including DSA)
  - Radionuclide studies

- **Essential Objectives**
  - Understand the anatomy and common pathology of congenital and acquired cardiac conditions.
  - Correlate plain film findings of common congenital abnormalities with those shown by angiography and explain the pathophysiology, including abnormal pressure measurements. Correlate plain film findings and echocardiographic studies of patients with acquired valvular diseases and other common pathological conditions including pericardial pathology.
  - Understand the role of newer modalities like CT and MRI in aortic diseases e.g. aorto-arteritis, aortic dissection and aortic aneurysm.
  - Be able to perform fluoroscopy on patients before and after valve replacement and identify complications after valve replacement.
  - Understand the principles and logic behind interventional procedures carried out in cardiovascular labs e.g.
    - PTCA
    - Balloon dilatation of valvular lesions

      Septostomy, etc.

- **Evaluation**

Annual assessment by an outside expert.

- Day-to-day assessment
- By a small group of faculty
- Maintain a log book to be checked by faculty in charge

7. NEURORADIOLOGY AND HEAD AND NECK IMAGING

- **Goal**

At the end of the course the resident should be able to demonstrate reasonable proficiency in assisting during procedures as well as in the interpretation of all neuroradiological studies. This includes:

- Angiograms (cerebral and non-cerebral)
- Transluminal angioplasties
- Embolization procedures
- Myelography

They should also be able to perform and interpret CT and MRI of the head and spine.

- **Content Coverage**

Includes imaging (using conventional and newer methods) and interpretation of diseases of the head, neck and spine, covering:

- Congenital lesions
- Infective lesions
- Vascular lesions
- Traumatic conditions
- Neoplasia

Also includes interventional procedures carried out in the department of interventional radiology.

- **Essential Objectives**
- Know detailed normal neuro-imaging anatomy on different imaging modalities.
  Identify pathologic conditions (listed under the content) on images acquired using different techniques and communicate the report in a concise manner.

- Participate in daily neuroradiology conferences held with the neurosurgery or neurology units.

- **Evaluation**

  Annual assessment by an outside expert.

- Day-to-day based on reporting and procedures performed
- By a small group of faculty
- Maintain a log book to be checked by faculty in neuroradiology

8. BREAST IMAGING

- **Goal**

  At the end of the course the resident should be able to assess various breast imaging investigations including Mammography, Breast USG, MRI.

- **Content Coverage**
  - Includes imaging (using conventional and newer methods) and interpretation of neoplastic and non neoplastic diseases of breast.
  - They should assist and eventually perform various breast interventions under USG, Mammography and MRI guidance.

- **Essential Objectives**
  - To Understand various breast related investigations and breast pathologies. And to be able to suggest and perform appropriate investigation for said symptoms.
  - To be able to detect early cancers on imaging.

EVALUATION

Annual assessment by an outside expert.

- Day-to-day based on reporting and procedures performed
- By a small group of faculty
- Maintain a log book to be checked by faculty in neuroradiology

9. GENERAL RADIOLOGY

- **Goal**

In this rotation the resident learns to evaluate conventional radiographs. This includes radiographs of:

- Chest
  Abdomen
  Pelvis
- Skull
- Spine
- Musculoskeletal system
- Soft tissues

- **Essential Objectives**
  - Learn to direct and perform radiography on patients.
  - Decide on further imaging views based on the clinical suspicion and initial imaging
  - Write radiograph reports in a methodical, concise and precise manner and communicate them to the referring unit.
  - Present interesting cases in departmental meetings.

10. ULTRASOUND (INCLUDING GYNAE / OBSTETRICS)

- **Goal**

At the completion of this rotation the resident should be able to perform and interpret all ultrasound studies, including:

- Abdomen
  Pelvis
  Small parts
- Neonatal head
- Color-Doppler imaging
- Peripheral vascular studies (extremity arterial and venous)
- Obstetrics / Gynaecology
- Interventional procedures using ultrasound guidance

The resident should have thorough knowledge of common abnormalities of:

- Abdominal and pelvic organs
- Retroperitoneal structures
- Neck
- Chest
- Extremities
- Small parts (thyroid, parathyroid, scrotum, orbit, breast)

- **ESSENTIAL OBJECTIVES**
  - Determine or select the appropriate diagnostic procedure for the clinical problem.
  - Demonstrate proficiency in patient scanning using appropriate techniques and instrumentation.
  - Modify the procedure if required, based on the observed abnormalities (pathology).
  - Analyze results, make a diagnosis, and record findings.
  - Communicate findings and diagnosis to the referring physician.
  - Present interesting ultrasound cases in departmental conferences / meetings.

- **EVALUATION**

Annual assessment by an outside expert.

- Ongoing basis using day-to-day work
- Presentation in departmental meets
- Maintain a log book
- By a group of faculty at the end of the rotation

11. CT

- **Goal / Objectives**

The goals/objectives to be achieved by the end of this rotation are

:

- Select CT protocol according to the clinical diagnosis. He/she should be able to direct and modify (if required) the performance of the CT examination.
  - Demonstrate knowledge of CT findings of common pathological conditions occurring in the:

- Head

- Neck
- Chest
- Abdomen
- Pelvis
- Soft tissues
- Musculoskeletal system

Be familiar with conventional and modified CT techniques, including:

- High-resolution CT (HRCT)
- Dual-phase CT
  - CT angiography
  - Bone mineral densitometry (BMD)
  - Multislice CT, etc.

- Interpret conventional and modified body CT examinations (including HRCT, dual/triple phase CT, CT portography, virtual CT, etc.) with a reasonable degree of accuracy.
- Demonstrate proficiency in verbal and written reporting of CT findings and differential diagnosis.
- Understand the limitations and potential fallacies of CT imaging of various pathological conditions and correlate CT findings with other imaging modalities, including formulating recommendations for further appropriate imaging.
- Perform CT-guided biopsy procedures under guidance of seniors and eventually perform independently.

- Present interesting CT cases in departmental meetings.

- **Essential Objectives**

  Review the daily body CT schedule and, based on known clinical information and review of prior radiologic studies, select the most appropriate CT imaging protocol for each patient. This may include modifying an existing CT protocol to provide the most appropriate examination.

- Develop a working knowledge of the actual performance of CT examinations, including:

- Starting intravenous lines
- Amount and timing of IV contrast injection
- Actual operation of the CT machine

- Review and report all completed body CT examinations — initially under supervision of seniors and later independently.
- Participate and present CT cases in departmental and inter-departmental meetings.

- **EVALUATION**

Annual assessment by an outside expert.

- On daily basis after observing reporting and working in the CT room by a group of faculty
- Maintain a log book under supervision of the faculty in-charge

12. ANGIOGRAPHY AND INTERVENTIONAL RADIOLOGY

- **Goal**

At the completion, the resident should be able to assist the most common non-cerebral angiographic studies.

He/she should have a good basic understanding of both the vascular and interventional radiologic Procedures such as angioplasty, embolization using various embolizing agents, as well as the various non-vascular interventional procedures such as percutaneous nephrostomy, stenting, abscess

drainage, PTC/PTBD, percutaneous biopsy, balloon dilatation of the esophagus etc. He/she should have a good understanding of the various equipment and available catheters and guidewires and other technical aspects of special procedures. In addition he/she should know all the potential risks and complications of these procedures and their management.

- **Essential Objectives**
  - Evaluate the requisition for appropriate clinical information to determine if additional information is needed.
  -

- Determine or select appropriate diagnostic procedure for the clinical problem.
- Assist and perform appropriate procedures under supervision and modify procedures based on observed abnormalities (pathology)
- Know the potential risks and complications of procedures performed
- Know normal vascular anatomy applicable to angiographic procedures performed and know normal anatomy and landmarks to perform other non-vascular procedures
- Present interesting cases in the departmental meets.

- **Evaluation**

Annual assessment by an outside expert.

- Day-to-day evaluation
- By a group of faculty
- Will maintain a log book

13. PAEDIATRIC RADIOLOGY

- **Goal**

  Intention is to train residents to perform common radiologic procedures and to be able to interpret paediatric studies in order that they can appropriately deal with examinations of children in a non-paediatric hospital environment.

  At the completion the resident should be able to interpret most of the conventional and newer paediatric examinations which includes: upper airways, chest, genito-urinary, gastro-intestinal and musculo-skeletal systems. Residents should be familiar with many of the neurologic conditions encountered in neonates and children. Residents should also be able to perform transfontanelle cranial ultrasound.

- **Content Coverage**

  Common diseases and disorders of different organ systems covering congenital, inflammatory, traumatic, neoplastic and other miscellaneous conditions, using both conventional and newer imaging methods.

- **Essential Objectives**

- Understand the appropriate indications for various imaging procedures and determine that the patient has been properly prepared for the procedure.

- Know the standard radiographic views for paediatric examinations.
- Learn to recognize and evaluate imaging manifestations (on conventional and newer methods) of common paediatric conditions occurring in the head/neck, chest, abdomen/pelvis and in the musculo-skeleton.
- Perform paediatric fluoroscopic examinations with skill and accuracy.
  Understand and apply the knowledge and principle of radiation protection, both for the child and the operator.

- **14. RADIOLOGY IN EMERGENCY MEDICINE**

- **Goal**

  At the end of the course, resident should be able to give an evaluation of the emergency radiographic examinations. He/she should also be familiar with medicolegal cases (MLC) procedures.

- **Essential Objectives**
  - Determine and direct radiography in emergency patients and review and interpret the radiographs.
  - If study is incomplete then determine additional views or repeat views.
  - Know indications for and limitations of the common emergency imaging procedures. Communicate findings, diagnosis and other relevant information to the emergency room physician.
  - He/she should be able to perform (some under supervision) and interpret special imaging procedures needed in emergency room e.g. barium studies, excretory urography, CT, ultrasound, Doppler and angiography.

15. ONCOLOGIC RADIOLOGY

- **Goal**

  Resident should be able to interpret radiological investigations in patients with neoplastic diseases (both benign and malignant). He/she should be able to perform, interpret and diagnose these patients.

- **Essential Objectives**
  - Understand pathology and patho-physiology of common neoplasms.
  - Learn the algorithmic approach to image these patients based on the suspected disease, its biological behaviour and potential and limitations of various imaging modalities.
  - Perform appropriate investigation (both conventional and newer methods), interpret the results and reach a reasonable diagnosis/differential diagnosis based on the clinical and biochemical results
  - Learn to communicate the results in a precise way in a written report to the concerned unit.
  - Present interesting cases in the departmental meets.

16. NUCLEAR MEDICINE / PET

- **Goal**

At the completion of this rotation the resident should be able to interpret common nuclear medicine examinations. He/she should be able to evaluate the examinations for completion and determine what further images (including non-nuclear medicine) need to be done. He/she should have a good understanding of the physical and biological properties of the commonly used radiopharmaceuticals and become familiar with safe handling of isotopes and basic radiation safety measures while dealing with isotopes.

- **Essential Objectives**
  - Review all cases performed each day.
  - Interpret the results of the procedures and give an appropriate diagnosis.
  - Observe and help in some common procedures performed in the department (e.g. thyroid, kidney, bone, PET), understand the principle underlying the procedure and the basis for using a particular isotope in an investigation.

- **Evaluation**
  - Day to day by the nuclear medicine staff.

17. AI IN RADIOLOGY

- **Goal**

At the end of the course residents should be able to use relevant AI tools available in the

department with confidence. Know their limitations and should be able to work for its further development.

They should be able to use various fusion imaging techniques to assess pathologies.

They should be able to use and do various research work using 3D printing technologies.

DISSERTATION

Thesis

- Every candidate pursuing MD degree course is required to carry out work on a selected research project under the guidance of a recognised post graduate teacher. The results of such a work shall be submitted in the form of a dissertation.

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

- Principle investigator guide will be from the department of Radio-diagnosis while co-Principle investigator can be from either the department of Radio-diagnosis or other disciplines related to the dissertation topic.

- Every candidate shall submit a thesis protocol to the Academics department in the prescribed proforma containing particulars of proposed dissertation work Six months from the date of commencement of the course. The thesis protocol shall be sent through the proper channel.

  Protocol in essence should consist of:
  (a) Introduction and objectives of the research project
  (b) Brief review of literature
  (c) Suggested material and methods
  (d) Bibliography

- Such thesis protocol will be reviewed by the Institutional Ethics committee and the dissertation topic will be registered by the Institute.

- Submission of thesis

  Thesis will be submitted at the end of two and a half (2.5) years.Thesis should consist of:

  - Introduction
  - Review of literature
  - Aims and objectives
  - Material and methods
  - Results
  - Discussion
  - Summary and Conclusions
  - Tables
  - Annexures
  - Bibliography.

- Five copies of dissertation thus prepared shall be submitted to the Academics department,
- six months before the final examination.

Dissertation is graded as follows:

- Highly commendable
- Commendable
- Satisfactory
- Rejected

- **MD (RADIODIAGNOSIS), POSTING SCHEDULE**

  Total Duration: 3 years

  Applied Physics and Basic Sciences

First year:

USG/CT/MRI/ Mammography/interventional Radiology posting for 2-3 months each.

Second year:

USG/CT/MRI/ Mammography/interventional Radiology posting for 2-3 months each.

Third year:

USG/MRI/interventional Radiology/Out posting to KEM and Wadia Hospitals - for 2-3 months each.