

Postgraduate Courses in Radiodiagnosis

Syllabus of M.D. Radiodiagnosis of South Gujarat University

- A series of P.G. Lectures by P.G. teachers.
- A series of seminars by the P.G. Students.
- P.G. Cases discussions
- P.G. Tutorial classes- chapter of subject- wise.
- Attending and performing clinical work
- Participation in undergraduate theory and practical teaching.
- Undergoing training when posted in different sections of the department.
- Short periods of posting in the other clinical departments
- Perusing the thesis work/dissertation work as allotted by the P.G. Teacher.
- Participation in the departmental research work.

Physics Related to Radiology and Imaging

(A) X-Ray :

Production & General properties.

X-Ray tube.

Measurement of quantity & quality of X-Rays.

Absorption & Scattering.

Characteristic X-Ray & filtration.

Depth dose, back scatter. Use of dosage meters.

Radiation Protection

Dark room Techniques

(B) Principles & Working :

- CT

- MRI

- USG & Colour Doppler

-D.S.A.

Mammography

(C) Dark room techniques

- Theory of photographic action & image formation.

- Developing & fixing techniques

(D) Protection against Radioactive rays

(E) Radioactivity :

Radioactive transformation. Laws of radioactive decay. Alpha, Beta & Gamma rays.

Absorption co-efficient & half – value layer. Isotopes and their medical uses. PET, SPECTS.

(F) Contrast Media : Types, uses, adverse reactions & their management.

(G) Recent Advances in Radiology

Clinical Subjects to Radiology and Imaging

Respiratory System:

- 1) Radiological anatomy of normal chest.
- 2) Methods of Examination.
- 3) Paediatric chest – congenital anomalies
- 4) Diaphragmatic & Pleural diseases
- 5) Pulmonary infections
- 6) Interstitial lung diseases
- 7) Tumors of lung
- 8) Mediastinal lesions
- 9) Chest trauma
- 10) Pulmonary diseases of unknown etiology
- 11) Pulmonary diseases with immunological basis

Cardiovascular System:

- 1) Normal appearance & anatomy
- 2) Radiology of pulmonary circulation.
- 3) Pericardium
- 4) Acquired heart diseases
- 5) Congenital heart diseases

Gastrointestinal & Biliary Systems

- 1) Acute Abdomen
- 2) Salivary gland, esophagus
- 3) Upper GI – Stomach, duodenum & small bowel diseases
- 4) Lower GI – Colonic diseases.
- 5) Biliary tract, Liver, Pancreas, Splenic diseases.
- 6) Methods of examination of GI Tract

Central Nervous System:

- 1) Anatomy of normal & abnormal skull
- 2) Myelography
- 3) Head trauma
- 4) Brain tumors
- 5) Stroke
- 6) Diseases of spine – infective, degenerative, tumors.

Urogenital Systems:

- 1) Congenital diseases
- 2) Methods of examination of urinary tract.
- 3) Urinary tract infections
- 4) Calculi of kidney, ureter & bladder.
- 5) Tumors
- 6) Vascular diseases
- 7) Lesions of bladder & Prostate.
- 8) Urogenital tract diseases related to obt. & Gynaec.
- 9) Lower urinary tract diseases
- 10) Adrenal gland diseases

ENT:

- 1) Pharynx and Larynx
- 2) Para – nasal sinuses
- 3) Mastoids

Eye & Orbit:

- 1) Trauma
- 2) Foreign body
- 3) Tumors

Bones & Joints:

- 1) Centers of ossification

- 2) Congenital Skeletal diseases
- 3) Skeletal trauma
- 4) Infective diseases
- 5) Tumors & tumor like lesions
- 6) Reticulosis and other Haemopoietic diseases
- 7) Haemopoietic diseases & Metabolic disorders
- 8) Metabolic and endocrinal disorders
- 9) Diseases of joints and arthrography

Dental:

- 1) Congenital
- 2) Inflammatory
- 3) Tumours

Miscellaneous Topics

- Soft Tissue Radiology
- Angiography: - Related to all systems of body
- Mammography
- Ultrasonography: - Principles, Medical, Surgical, Obstetrical / Gynecological,
- Ophthalmological, Musculoskeletal and Soft tissue conditions
- Doppler Studies: - Vascular and fetal
- Computerized Tomography (CT) :- Head and Whole body
- Magnetic Resonance Imaging
- Positron Emission Tomography (P.E.T.)
- Radionuclides
- Contrast Media :- Type, uses, Adverse reactions and their management.
- Recent Advances in Radiology

Clinical / Practical Training: Rotation postings in other departments

S. No	Posting	Period
1	ICU	1 Week
2	Anaesthesia	1 Week

Department of Radiodiagnosis

Time Table of Teaching

S. No.	Academic Activity	Frequency	Day
1	Case Presentation	Once a Week	Monday
2	Faculty Lecture	Once a Week	Tuesday
3	Journal Club	Once a Week	Wednesday
4	Seminar	Once a Week	Thursday
5	Spots discussion and practical exam	Once a Week	Friday
6	Guest lecture	Once a fortnight	Saturday
7	Interdepartmental teaching	Once a month	Saturday
7	Exams – Theory and Practical	After completion of each system	Sunday –date is decided before 1 month

7.Examination Pattern:- Department of Radiodiagnosis

Scheme of Examination

Theory	400 Marks
Clinical / Practical Examination	500 Marks
Viva- Voce Examination	100 Marks

Candidates will be allowed to appear for examination only if attendance (minimum 80%) and internal assessment are satisfactory and dissertation is accepted. As standard, one has to have scored 50% marks independently in theory and practical [to follow MCI guidelines]. **Details of Examination**

Paper	Course Content
Paper-1	Radiation physics, radiation biology , radiation protection, equipments, instruments, radiation monitoring, contrast media, adverse reaction and treatment, A.E.R.B .regulation, P.N.D.T. Act, basic medical sciences, such as Anatomy physiology, Pathology related to Radiology.
Paper-II	Investigations and diagnosis of various pathology related to respiratory, cardiovascular, G.I.T., GUT , abdomen and pelvic pathology.
Paper -III	Investigation and diagnosis of C.N.S. pathology, infective diseases, musculoskeletal system, obstetrics and gynecology, peripheral vascular system, general and systemic disease,
Paper IV	Essay type questions, Recent advances and interventional Radiology

[The distributions of chapters/topics shown against the papers are suggestive only and are liable to overlap]

Total marks of each paper will be 100. Questions on recent advances may be asked in any or all the papers. The format of each paper will be same as shown below.

Type of Questions*	Number of Questions	Marks for Each Question	Total Marks
Long answer question	03	25	75
Short notes	01	8,8,9	25
Grand Total			100

*This is subject to change

Annexure 11B

Department of Radiodiagnosis

Examination Pattern

External Evaluation of P.G. Student's Performance

Practical examination-Include case study & viva-voce

Types of Cases	No. of Cases	Marks
Long Case	01	225
Short Cases	02 (112 & 113 marks each)	225
Spots	25	50
Total		500

Every candidate should be examination on at least one long case two short cases and spot examination. There will be discussion on all aspects of diagnosis, investigations and modern trends

(including instruments/equipments). Viva-voce examination will elicit knowledge about investigation procedure, modern concept of all aspects of the subject.

Viva voce Examination;

Contents of evaluation	Marks Allotted
• Oral viva (Physics)	50
• Oral viva (investigation)	50

Viva-voce examination will elicit knowledge about investigation procedure, modern concept of all aspects of the subject.

All examiners will conduct viva-voce conjointly on candidate's comprehension, analytical approach, expression and interpretation of data. It includes all of course contents. The course content defined shall be divided into 4 parts; each examiner given a particular part and allowed to ask questions bearing his part [idea being covering of the whole subject and avoiding duplication].

Every examiner shall award marks out of 40, making it a total of 160. 20 marks shall be allotted to pedagogy, wherein the candidate shall be asked to take a class on a given topic [shall be given day before] and his teaching ability being evaluated conjointly by all the examiners. Rest 20 marks shall be for discussion on the dissertation topic and the review of log book.