

CURRICULUM

For lectures and exercises

VIth semester

Lectures:

1. Diagnostic imaging – basic diagnostic methods.
2. Diagnostic imaging of respiratory and cardiovascular systems.
3. Diagnostic imaging of gastro – intestinal, urinary and urogenital systems.
4. Diagnostic imaging of musculoskeletal system.
5. Diagnostic imaging of inflammatory diseases and bone tumors.
6. Diagnostic imaging of aseptic osteonecrosis, endocrine related changes in the bones. Traumatic injuries.
7. Diagnostic imaging of central nervous system.

RADIATION PHYSICS AND RADIATION PROTECTION – VI semester

1. X-ray production. Bremsstrahlung and characteristic X-rays. X-ray spectrum. Interaction of X-rays with matter, characteristics of interaction with human tissues.
2. X-ray tubes - construction, characteristics. High voltage generators. Dental X-rays systems - types, basic characteristics.
3. Image formation. Image detectors - x-ray film, screen-film combination, digital detectors. Image quality - contrast, unsharpness, noise.
4. Basics of radiation protection. Basic quantities and units in medical radiology. Natural and man-made sources of radiation. Medical exposure as a main contributor to the man-made radiation. Principles of radiation protection
5. Basic norms of radiation protection. Methods of radiation . protection of medical staff in dental radiology. Radiation protection requirements to the facilities. Radiation protection tools. Dosimetry monitoring.
6. Radiation protection of patient. Methods for patient dose reduction. Patient doses and image quality. Optimisation of radiation protection.
7. Quality assurance and quality control in dental radiology. Requirements to X-ray systems. Quality control program. Acceptance testing, Commissioning, performance testing.

VIth semester

Practical exercises:

1. Diagnostic imaging – principles, apparatus, basic terminology. X – ray image and methods – essence; properties.
2. Imaging diagnostic of chest and lung – methods of diagnostic, normal anatomy and diseases.
3. Imaging diagnostic of cardiovascular system – methods, normal anatomy and diseases.
4. Imaging diagnostic of gastro – intestinal system - methods, normal anatomy and diseases.
5. Imaging diagnostic of the urinary system – methods, diseases.
6. Imaging diagnostic of bones and joints. Basic pathological changes. Fractures.
7. Imaging diagnostic of the diseases of bones, including inflammatory and tumors, aseptic osteonecrosis and endocrine related changes in bones.
8. Structure of X – ray study; acquaintance with different techniques for intraoral, panoramic tomography and skull radiograms.
9. X – ray anatomy of tooth and jaws.
10. Intraoral radiographs. Techniques.
11. Panoramic tomography.
12. Radiograms of the skull – different techniques.
13. Basic bone changes in the jaws and their representation.
14. Demonstration and performance of different techniques.
15. Colloquium.