



## **Basic Principles of X-Ray Imaging Systems - COURSE OVERVIEW**

**Course:** Basic Principles of X-Ray course is designed for service engineers. Course covers Basic X-Ray principles, Theory, Image reconstruction, image performance, Simplified block diagrams. The course will be conducted in class room and on fully functional X-Ray systems.

**Qualifications for Admission:** Students should have prior service experience, preferably with X-ray devices. They should have a minimum of a two- year degree in electronics or equivalent experience. Students should have basic computer skills and a laptop computer.

### **Course Overview:**

Features: Basic X-Ray & theory principles, history, image generation, simplified X-Ray system block diagrams, general X-Ray Image Quality Assurance systems overview. Review of theory applied to X-Ray system bays (Labs).

X-Ray principles:

- X-ray principles
- Fluoro Principles
- Image Quality
- Basic X-Ray system block Diagrams
- X-Ray Safety
- X-Ray test equipment

System hardware – General X-Ray block diagrams and basic functions:

- Power distribution, X-ray system, Gantry, Table, Data acquisition, Image Reconstruction and Console Computer block diagrams

Lab Exercises

- Basic X-Ray production, Hardware Identification – Consoles – Gantry – Table – X-ray generator – Detector - , General Image QA,

**Summary:** Upon Completion of the 3 day course, the engineer should be able to understand X-Ray theory and X-Ray basic subsystems and their impact to Image Quality and Image Artifacts.

\*Course outline may change to meet student's needs\*