



# Essentials of Diagnostic Imaging Service

## **Introduction**

This two week course is designed for students entering the Diagnostic Imaging Service Field. It will provide the necessary skills and knowledge to operate, service, maintain, and provide basic troubleshooting on today's complex medical imaging systems.

Tri-Imaging Solution's (TIS) Essentials of DI Service is a blended learning course, similar to today's college courses. By combining the prerequisite online learning platform with extensive laboratory time at our state of the art facility, this proven learning environment reduces time away from your facility without compromising quality and effectiveness of the training. At Tri-Imaging we will reduce your training cost and increase your efficiency of service. Hi Intensity Tri-Imaging Training (HITT) – Reducing the gap between training and real world service thereby “Empowering the Engineer”.

## **Prerequisites**

Two-year electronics degree or equivalent experience:

Completion of provided online course material prior to arrival at facility:

## **Course Expectation**

Students completing Essentials of Diagnostic Imaging Service will be productive 1<sup>st</sup> call imaging technicians familiar with all modalities, regulations, maintenance and basic troubleshooting capabilities.

## **Course Objectives**

Upon completion of this course students will be able to:

- Demonstrate and understanding of X-ray theory and X-ray production
- Demonstrate radiation safety as it applies to the patient & the engineer
- Identify the components within X-ray system
- Demonstrate the operation of radiographic, fluoroscopic, and mobile systems
- Understand & demonstrate adjustment to system parameters to produce changes to the final image
- Determine proper understanding and use of radiological testing equipment
- Determine system compliance with current regulations
- Demonstrate an understanding of basic Preventative maintenance and troubleshooting procedures





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### COURSE/LAB FOCUS AREAS:

- Radiation Safety
- Major system components of different modalities
- X-ray/Fluoro/Mammo/CT/Portables/CR/DR
- Table/Generator/OTS/Tube/Control Console
- System warmup parameters and purpose
- Image quality factors.
- How an image is formed
- Manipulation of image quality factors
- Test equipment for Imaging
- Customer Service from the tech's perspective
- Different manufacture approach to documentation
- Evaluation of schematics from multiple manufacturers
- X-ray tube functionality, requirements and what fails
- X-ray tube replacement
- X-ray compliance documentation.
- X-ray tube measurements and checks throughout multiple manufacturers
- Evaluation of system components through multiple manufacturers
- System power requirements
- Generator/OTS/Table
- High frequency circuit comparison to previous power generation systems
- Power requirements for x-ray generation
- AEC, table operations, OTS operations
- Troubleshooting techniques
- Manufactures service interfaces
- Fluoroscopic imaging and the imaging chain, image intensifiers, digital receptors
- Fluoroscopic measurements, operations, maintenance, compliance testing
- Preventive maintenance procedures on various modalities in compliance with manufacturer's literature
- Troubleshooting on various modalities.

