



Advanced Diagnostic Imaging Service

Introduction

This two week course is designed for students continuing advanced education within the Diagnostic Imaging Service Field. Specifically designed to provide the necessary skills and knowledge to operate, service, maintain, provide troubleshooting, and calibration on today's complex medical imaging systems.

Tri-Imaging Solution's (TIS) Advanced 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 Essentials of Diagnostic Imaging Service or course equivalent

Course Expectation

Students completing Advanced Diagnostic Imaging Service will be productive imaging engineers capable of performing duties associated with repair, maintenance, and calibration of advanced fluoroscopic imaging systems.

Course Objectives

Upon completion of this course students will be able to:

- Demonstrate artifact evaluation and troubleshooting techniques to determine faulty FRU
- Demonstrate understanding of digital technologies/CCD/detector technologies/direct capture/indirect capture
- Demonstrate understanding of advanced high-frequency concepts
- Demonstrate understanding of fluoroscopic cooling systems, and their use
- Determine proper use and selection of imaging system test equipment
- Determine system compliance with current regulatory guidelines
- Demonstrate an understanding of advanced preventative maintenance and troubleshooting procedures
- Perform imaging system evaluation, alignment, and optimization of individual components of the imaging chain
- Demonstrate an understanding of networking and DICOM as applicable to diagnostic imaging systems
- Demonstrate system calibration post repair to return full functionality

A graphic with the word "EDUCATION" in large, bold, orange letters. Below it, the phrase "THAT EMPOWERS THE ENGINEER" is written in smaller, blue, sans-serif capital letters. The background features a blue and white geometric pattern resembling a circuit board or a stylized 'E' shape.

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COURSE/LAB FOCUS AREAS:

- Radiation Safety
- Dose as applied to the following areas:
 - Entrance dose
 - Max R
 - Detector
- Major imaging system components
- Optical system evaluation
- Image intensifier evaluation
- Detector evaluation
- Image quality factors.
- How an image is formed
- Manipulation of image quality factors
- Test equipment for Imaging
- Different manufacture approach to documentation
- Evaluation of schematics from multiple manufacturers
- X-ray tube functionality, requirements and what fails
- Fluoroscopic imaging system tube removal and replacement
- Imaging system compliance documentation.
- X-ray tube measurements and checks throughout multiple manufacturers
- System power requirements
- Advanced high frequency concepts
- Power requirements for fluoroscopic imaging systems
- 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
- Networking and DICOM connectivity
- Networking and DICOM troubleshooting

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