MRI Phase 2: Advanced MRI Service

RSTI

RADIOLOGICAL SERVICE TRAINING INSTITUTE

Introduction

The MRI Advanced course is a skills development course designed to build on fundamentals acquired during the MRI Principles service training course.

The course teaches service engineers the advanced concepts of MRI system operations, system software (workstation) management, calibrations, performance monitoring, diagnostic troubleshooting and preventive maintenance (PM).

The engineer will learn the concepts of advanced imaging techniques. These techniques include both image creation and image analysis. MRI image artifact recognition, image analysis, and corrective action will be emphasized. A strong emphasis will be placed on hands-on labs to support the presentation of advanced principles.

Prerequisites

To attend this course, the service professional must have completed MRI Phase 1 (MRI Principles) or have equivalent experience.

Objectives

At the conclusion of this course participants will be able to:
- Understand the advanced theory of MR imaging technology
- Understand advanced imaging techniques
- Manage the MRI workstation and system software
- Perform system calibrations
- Use MRI system documentation and diagnostic tools
- Diagnose and correct image artifacts
- Diagnose and correct system failures
- Perform all Planned Maintenance (PM) activities

Course Outline

Day 1
- Advanced MRI principles:
  o Advanced RF Receive Chain
  o Advanced Spatial Encoding
  o Advanced Raw Data Collection
  o 3T RF Transmit Chain

Day 2
- Advanced Scanning Techniques
  o Advanced Scan Sequences
  o Image Evaluation
  o Image Artifacts
  o Field Maps
  o ACR Testing
- Workstation Management
  o Operating Software Loading
  o Application Software Loading
  o Cloning / Ghosting
  o Backup / Restore

Day 3
- Advanced System Calibration
  o Magnet Procedures
  o RF Chain Procedures
  o Gradient Chain Procedure
  o Cooling System Procedures
- Troubleshooting Diagnostics
  o Daily QA

o RF Receive Only Coils
o System Logging Operations
o Error Codes
o Manual Image Analysis
o Service Documentation

Day 4
- System Level Troubleshooting
  o Remote Troubleshooting
  o Facility Checks
  o System Logs
  o Status Lights
  o Corrective Actions

Day 5
- Preventive Maintenance (PM)
  o PM Document Review
  o PM Schedule
  o PM Recording Keeping
  o PM Tasks Review
- Course Review
- Final Exam

30745 Solon Road · Solon, OH 44139 · **P**440.349.4700 · **F**440.349.2053 · **Toll-Free** 1.833.229.7784
www.rsti-training.com · registration@rsti-training.com

Hands-On Training Course
Course Length: 1 Weeks
CEU's Awarded: 4 CEU's
State of Ohio Registration No. 93-09-1377T