

# PACS Engineers & Administrators Certification (Phase 1)



RADIOLOGICAL SERVICE TRAINING INSTITUTE

## Introduction

The PACS Engineers & Administrator Certification Phase I will teach the clinical and technical skills necessary to understand and analyze today's PACS system administrative challenges. Students will learn digital integration between all systems in the imaging departments including modalities and information management systems. The technical concepts that will be covered will allow students to troubleshoot network hardware, first response software and DICOM related image transfer issues.

## Prerequisites

The seasoned service professional must have a basic understanding of computer fundamentals, be able to navigate windows operating system. Students are required to bring their own Windows laptop with administrator privileges.

## Objectives

Upon completion of the course participants will be able to:

- Perform day-to-day network hardware maintenance
- Manage department security and patient record confidentiality
- Demonstrate understanding of architecture and communication of entire digital imaging networks
- Recognize DICOM and software related image displays and transmission problems

## Course Outline

### Day 1

- Hardware
  - Dedicated processing
  - Disk technology
  - Reliability
  - Redundancy
- Lab Activities
  - Configure & Build RAID Array using test server
- Operating systems
  - Unix/Linux
  - File system
    - Permissions
    - Viewing & editing files
  - DOS
  - Windows

### Day 2

- Databases
  - SQL
- Data representations
  - Binary/Hex
  - Signed/Unsigned/Floating Point
  - Monochrome/RGB
- Lab Activities
  - Install and build SQL database
  - SQL queries
  - SQL joins
- Networking technology
  - Topologies
  - Hardware
  - OSI model
  - Bandwidth
  - Ethernet, TCP/IP
    - Addressing
    - Routing
    - Subnetting

- Lay out hospital subnets
- Hardware for best performance
  - FTP
  - Configuration
  - TCP packet analysis
  - Troubleshooting
- Monitoring performance

### Day 3

- Security concepts
  - Authentication
  - Authorization
  - Confidentiality
  - Integrity
  - Encryption
  - User management & access Parameters
  - Monitor audit trails
- PACS overview
  - PACS architecture
  - PACS components
  - Communication
  - Components
    - CR/DR
  - Viewstation/workstation requirements

### Day 4

- PACS overview (cont'd)
  - Archiving
  - Storage technology
    - DAS/NAS/SAN
    - RAID
    - Exchange media
    - Backup patient demographics and image directories
  - Hospital workflow
    - Digital radiology imaging

# **PACS Engineers & Administrators Certification (Phase 1)**



RADIOLOGICAL SERVICE TRAINING INSTITUTE

- Image characteristics
- QA/QC programs
- Configure image routing and route tables
- Administering exam flow
- Remote system viewing

## **Day 5**

- Review
- Final Exam