

**Course Objectives/Course Outline
Spokane Community College**

Course Title: Quality Management

Prefix and Course Number: RAD 212

Course Learning Outcomes:

By the end of this course, a student should be able to:

- Identify and describe the guidelines for a Quality Management program
- Identify the different state, federal and local regulations for Radiology
- Identify and describe the differences between Quality Management, Quality Control, Quality Assurance and Continuous Quality Improvement
- Identify the types of graphs and charts used to organize and present data in total quality management
- List the basic administrative responsibilities of a quality management program
- Describe the various components of a risk management program
- Describe the radiation safety protocols for patients and radiation personnel
- Describe visual, performance and environmental inspections
- Identify and describe the different type of Q.C tests for Radiology and Fluoroscopy equipment
- Identify and describe the different type C.R and DR equipment and their tests
- Describe PACS and IMACS
- Identify the acceptable parameters for a Repeat Analysis
- Identify and describe the different artifacts on images
- Describe the corrective action required for elimination the appearance of image artifacts

Course Outline:

- I. Quality Management Purpose
 - A. Quality Assurance
 - B. Quality Control
 - C. Continuous Quality Improvement
- II. Regulations
 - A. Health and Safety Act
 - B. OSHA
 - C. Report to FDA
 - D. MQSA
- III. The Joint Commission
- IV. Information Analysis Tools
 - A. Flowchart
 - B. Cause-and-Effect Diagram
 - C. Histogram
 - D. Pareto Chart
 - E. Scatter Plot
 - F. Trend Chart
 - G. Control Chart
- V. Administrative Responsibilities

- A. Communication Network
- B. Patient Comfort
- C. Personnel Performance
- D. Record-Keeping System
- E. Corrective Action
- VI. Risk Management
 - A. Risk Analysis
 - B. Policies and Procedures
- VII. Radiation Safety Program
 - A. Patient
 - B. Visitors
 - C. Personnel
 - D. Radiographic and Fluoroscopic Exams
- VIII. Quality Control of Radiation Equipment
 - A. Visual Inspection
 - B. Environmental Inspection
 - C. Performance Testing
- IX. Q.C Testing
 - A. Light field Congruence
 - B. Beam-Bucky Tray Alignment
 - C. Protective Lead Apron Test
 - D. Back up or maximum exposure, time
 - E. Consistency of exposure with varying MA
 - F. Consistency of exposure with varying kVp
 - G. Consistency of exposure with varying field size
 - H. Consistency of sensor chambers
 - I. Reproducibility
 - J. Density Control Function
 - K. Consistency of exposure with varying part thickness
- X. Exposure Artifacts
 - A. Motion
 - B. Patient Artifact
 - C. Improper Density
 - D. Positioning Quantum Mottle
 - E. Poor Film Screen Contact
 - F. Double Exposure
 - G. Grid Lines/Cutoff
- XI. CR and DR Equipment and Testing
 - A. CR-Secondary Capture
 - B. Laser Scanning
 - C. Advantages of Computed Radiography
 - D. Disadvantages of Computed Radiography
 - E. DR-Indirect-conversion
 - F. DR-Direct –Conversion
 - G. Image Presentation on Monitors
 - H. Inadequate Erasure Thoroughness
 - I. Laser Jitter
 - J. Contrast Evaluation
 - K. Sharpness

- L. Shading Correction
- XII. PACS and IMACS
- XIII. Repeat Analysis
 - A. Repeat Rate
 - B. Improved Department Efficiency
- XIV. Artifacts
 - A. Heat Blur
 - B. Improper Image Brightness
 - C. Electronic Noise
 - D. Quantum Mottle
 - E. Defects in the Imaging Plate
 - F. Phantom Image Artifact
 - G. Increased Sensitivity to Scatter
 - H. Double Exposure
 - I. Scanner Malfunction
 - J. Foreign objects
 - K. Dropped Pixels
 - L. Halo Artifact
 - M. Printer Errors
- XV. Corrective actions for Artifacts