Industrial Radiography

WELDENG 7302

Credit Hours:
3.00 - 3.00

Course Levels:
Graduate (5000-8000 level)

Course Components:
Lecture

Course Description:
Basic elements of industrial radiography, characterization of a radiographic system as a linear system, quality of radiographs, real-time radiography, microradiography, and computerized tomography.

Prerequisites and Co-requisites:
Prereq: Grad standing, or permission of instructor.

Course Goals / Objectives:
- Achieve basic understanding of main concepts and aims of radiography
- Learn generation of X-ray and interaction of ionizing radiation with materials
- Learn to select parameters to optimize image quality
- Learn fundamentals of real-time radiography, microradiography and computerized tomography
- Obtain some basic laboratory experience with radiographic testing
Course Topics:
- Introduction to course.
- Generation of X-ray.
- The effect of changing mA and kV on the X-ray spectrum.
- Interaction of X-rays with materials.
- Image formation and X-rays Films. Film characteristic curves and contrast sensitivity measurement.
- Selection of Exposure Parameters. Film radiography laboratory.
- Factors Affecting Quality of Radiographs. Inspection of welds laboratory.
- Real-time radiography. Evaluation of radiographic systems.
- Homework siposia presentations and practical examples.
- Modeling a radiographic system as a linear system.
- Real-time radiography. Radiographyc laboratory.
- Microradiography.
- Introduction to computerized tomography.
- Computerized tomography.

Designation:
Elective