



Appreciation Course Outlines:

Online Appreciation Course Phased Array Ultrasonic Testing

Our Phased-array UT Appreciation Course has been especially developed to address the needs of engineers, designers or supervisors who want to gain a strong understanding of PAUT but do not need the in-depth knowledge associated with certification trainings. The Appreciation Course is divided in 5 sections: Basic UT Principles, PAUT Principles, Beam Steering, Beam Focusing and Optimizing Data Quality. The Appreciation Course covers manual and semi-automated PAUT.

SECTION 1: BASIC PRINCIPLES OF ULTRASOUND TESTING

- NDT, sound and ultrasound, basic notions, waves, dB system
- Probes, wedges
- Scans and views
- UT production, wave propagation, coverage, techniques
- Procedures and setup
- Calibration
- Inspection and data management

SECTION 2: PRINCIPLES UNDERLYING PHASED-ARRAY ULTRASOUND

- History
- Phased-array hardware
- Scans and views specific to 0-degree phased-array, cursors and gates
- Production of phased-array ultrasound, focal laws, coverage
- Phased-array specific procedures
- 0-degree setups
- Calibration of a 0-degree setup
- Introduction to 0-degree scanning
- Introduction to 0-degree data analysis
- Interactive defect viewer: Corrosion and laminations

SECTION 3: BEAM STEERING

- Introduction to beam steering
- Scan and views specific to angle beam phased-array
- Scans and views specific to angled phased-array
- Beam steering theory and limitations
- Angle beam setups
- Calibration of an angle beam setup
- Introduction to angle beam scanning
- Introduction to angle beam data analysis



SECTION 4: BEAM FOCUSING

- Introduction to focusing
- Phased-array probes
- Multiple scans and views
- Beam focusing theory and limitations
- Choosing between focused and non-focused beams
- Calibration with focused beams
- Defects shape vs. focal distance
- Interactive defect viewer: Welds defects

SECTION 5: OPTIMIZING DATA QUALITY

- Introduction to data quality
- Selecting optimal hardware
- Instrument limitations
- Data quality theory and limitations
- Optimizing setups parameters
- Encoder calibration
- Remote data analysis