

AATA 104A: ULTRASONIC PHASED ARRAY THEORY

Foothill College Course Outline of Record

Heading	Value
Effective Term:	Summer 2023
Units:	3
Hours:	40 lecture per quarter (40 total per quarter)
Prerequisite:	This course is limited to students admitted to the Nondestructive Testing Technician Apprenticeship Program.
Degree & Credit Status:	Degree-Applicable Credit Course
Foothill GE:	Non-GE
Transferable:	None
Grade Type:	Pass/No Pass Only
Repeatability:	Not Repeatable

Description

This course introduces the basic principles of ultrasonic phased arrays and prepares students to use phased array for ultrasonic examinations.

Course Objectives

The student will be able to:

- Understand the theory, principles, and physics of ultrasonic phased array testing
- Conduct a PAUT test
- Use PAUT appropriately in lieu of radiography
- Navigate PAUT machine menus and submenus

Course Content

- Phased array certification
- Phased array physics
 - Beam profile of a conventional probe
 - Near field and beam spread
 - Conventional focusing
 - Phased array focusing using time delays
 - Beam steering and element size
- Phased array technology
 - Probe frequency, element size and aperture L-wave probes
 - S-wave probes
 - Probe definition
 - Module PA3 phased array equipment
 - Starting the instrument
 - Navigating menus
 - Submenus

Lab Content

Not applicable.

Special Facilities and/or Equipment

When taught via Foothill Global Access, on-going access to computer with email software and hardware; email address.

Method(s) of Evaluation

Methods of Evaluation may include but are not limited to the following:

Results of a written test

Method(s) of Instruction

Methods of Instruction may include but are not limited to the following:

Discussion
 Slideshow
 Video
 Demonstration

Representative Text(s) and Other Materials

Handouts provided by instructor.

Types and/or Examples of Required Reading, Writing, and Outside of Class Assignments

Reading of in-class handouts.

Discipline(s)

Industrial Maintenance