

AATA 102B: PENETRANT TESTING LEVEL 2

Foothill College Course Outline of Record

Heading	Value
Effective Term:	Summer 2023
Units:	1.5
Hours:	20 lecture per quarter (20 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 covers the application of liquid penetrant testing and prepares students to understand the different products/equipment; select equipment and setup test equipment and area; understand the steps to conduct a test; interpret and evaluate indications; and become familiar with standards and codes.

Course Objectives

The student will be able to:

- Understand all applicable industry codes and standards
- Interpret results with respect to applicable codes and standards
- Understand limitation of the test method
- Write test reports

Course Content

- Application and removal of penetrants
 - Selection of penetrant materials
 - Cleaners
 - Penetrant
 - Developer
 - Selection based on family
 - Application of penetrant
 - Standard temperature limits
 - Dwell time
 - Drying
 - Drying parameters
 - Drying time limits
 - Application of developers
 - Types of developers
 - Aqueous
 - Non-aqueous
 - Developing time
 - Fluorescent inspection

- Black light warm up time
- Minimum intensity and light meter
- Visual adaptation
- Visual inspection
 - Minimum light intensity and light meter
- Post cleaning
 - Limitation of penetrant testing
- Interpretation
 - Interpretation of test results
 - Flow chart for interpretation
 - True, false, relevant and non-relevant indications
 - Categories of indications: Rounded and linear
- Examination of indications
 - ASTM E-433 Reference Photographs of Indications Types
 - MODULE 7: CODES & STANDARDS (Specific Training)
 - Codes
 - ASME Section V, Article 6
 - ASME Section VIII, Appendix 8 (Accept/Reject Criteria)
 - Standards
 - ASTM E-165 Standard Practice for Liquid Penetrant Examination
 - ASTM E-1209 Fluorescent Water Washable Liquid Penetrant Testing
 - Other codes and standards can be discussed at the request of the student, at the time of registration

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 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

American Society for Nondestructive Testing. [Personnel Training Publications: Liquid Penetrant Testing \(PT\) Classroom Training Book, 2nd ed.](#), 2019.

This text is still widely used within the industry and is the most current text used for training.

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

- a. Reading: Read Chapter 5, section 3
- b. Writing: Complete Quiz 5 on page 57. Quiz results will be reviewed in class as a group

Discipline(s)

Industrial Maintenance