NONDESTRUCTIVE TESTING (NDTE)

NDTE 1301  Film Interpretation of Weldments  3 Credits  (2 Lec, 2 Lab)  
This is the study of radiographic film, including exploration of radiographic basics, interpretation, and causes and effects of discontinuities.
Course Type: Technical

NDTE 1405  Introduction to Ultrasonics: Level 1 & 2  4 Credits  (3 Lec, 3 Lab)
This course covers the basic theory and applications of the ultrasonic techniques of materials testing covering the theoretical material from the certification test for Ultrasonic Level I American Society of Non-Destructive Testing.
Course Type: Technical

NDTE 1410  Liquid Penetrant, Magnetic Particle and Visual Testing: Level 1 & 2  4 Credits  (3 Lec, 3 Lab)
This course is a theoretical study and practical application of the non-destructive testing techniques of penetrant and magnetic particle testing required by quality assurance and test personnel.
Course Type: Technical

NDTE 1440  Eddy Current Testing  4 Credits  (3 Lec, 3 Lab)
This course covers the general principles of Eddy Current Testing including theory, knowledge, and skills for basic examination; effects of material properties, probe types, calibration standards, and equipment selection.
Course Type: Technical

NDTE 1454  Intermediate Ultrasonics: Flaw Detection and Sizing  4 Credits  (3 Lec, 3 Lab)
This course covers applications of the ultrasonic techniques of materials testing for flaw sizing and characterization.
Prerequisite(s): NDTE 1305 or NDTE 1405
Course Type: Technical

NDTE 2339  Pressure Piping Inspection  3 Credits  (2 Lec, 2 Lab)
This course covers the general principles of pressure vessel inspection. It covers American Society of Mechanical Engineers (ASME) and American Petroleum Institute (API) documents that pertain to pressure piping inspection in preparation for the API 570 certification examination.
Course Type: Technical

NDTE 2401  Advanced Ultrasonics: Phased Array and A.U.T.  4 Credits  (3 Lec, 3 Lab)
Emphasis is placed on examination of components and characterization of flaws using advanced techniques.
Prerequisite(s): NDTE 1354 or NDTE 1454
Course Type: Technical

NDTE 2411  Preparation for Certified Welding Inspector Exam  4 Credits  (3 Lec, 3 Lab)
This course covers welding fundamentals, welding inspection and code interpretation in preparation for the certified welding inspector examination.
Course Type: Technical

NDTE 2470  Pressure Vessel Inspection  4 Credits  (3 Lec, 3 Lab)
This course in general principles of pressure vessel inspection covers American Society of Mechanical Engineers (ASME) and American Petroleum Institute (API) documents pertaining to pressure vessel inspection. Emphasis is on preparing students to take the API 510 certification exam.
Course Type: Technical

NDTE 41001  Film Interpretation of Weldmen  4.8-9.6 Credits
NDTE 41005  Introduction to Ultrasonic Testing  9.6-12.8 Credits
NDTE 41010  Liquid Penetrant/Magnetic Part  9.6-12.8 Credits
NDTE 41040  Eddy Current Testing  6.4-9.6 Credits
NDTE 41050  Radiography for Welders  6.4-9.6 Credits
NDTE 41054  Intermediate Ultrasonics  6.4-9.6 Credits
NDTE 42000  Prof. Development: Welding  0.7-2.4 Credits
NDTE 42001  Advanced Ultrasonic Testing  9.6-12.8 Credits
NDTE 42011  Preparation for Welding Inspector Exam  4.8-16 Credits
NDTE 42039  Pressure Piping  4.8-12.8 Credits
NDTE 42040  Pressure Vessel Inspection  8-12.8 Credits
NDTE 55001  Intermediate Ultrasonics: Flaw Detection & Sizing  9.6 Credits
Prerequisite(s): NDTE 1405  Note: Textbook is required. This course covers applications of the ultrasonic techniques of materials testing for flaw sizing and characterization. (NDTE 1454)

NDTE 55002  Liquid Penetrant, Magnetic Particle and Visual Testing: Level 1 & 2  9.6 Credits
Prerequisite(s): None  Note: Textbook is required. This course is a theoretical study and practical application of the non-destructive testing techniques of penetrant and magnetic particle testing required by quality assurance and test personnel. (NDTE 1410)

NDTE 55003  Preparation for Certified Welding Inspector Exam  9.6 Credits
Prerequisite(s): None. Note: Textbook is required. This course covers welding fundamentals, welding inspection and code interpretation and the principle portion in preparation of the certified welding inspector examination. (NDTE 2411)

NDTE 55004  Advanced Ultrasonics  9.6 Credits
Prerequisite(s): NDTE 1454  Emphasis is placed on examination of components and characterization of flaws using advanced techniques. (NDTE 2401)

NDTE 55005  Magnetic Particle Level I/II (MT)  2.4 Credits
The course is designed for manufacturers, services companies, and overhaul facilities, who require their personnel to be trained in Magnetic Particle Testing, used to locate inherent, processing or service discontinuities in ferrous materials. In addition to covering the theoretical aspects of this method, the course provides demonstrations and practical hands-on laboratory time on both portable and stationary equipment.
NDTE 55006 Liquid Penetrant Level I/II (PT) 1.6 Credits
This course is for manufacturers, service companies, military organizations, etc. whose personnel require classroom training for qualification and certification in Liquid Penetrant Testing, which is used to detect inherent, processing and service related discontinuities that are open to the surface in nonporous materials. In addition to covering the theoretical aspects of this method, the course provides demonstrations and practical hands-on laboratory using both portable and stationary equipment. The course satisfies the training hours needed for both Level I and II certification in accordance with SNT-TC-1A.

NDTE 55008 Certified Welding Inspector (CWI) 4.8 Credits
The course covers topics of welding inspection techniques, metal joining and cutting processes, weld geometry and welding symbols, documentation for inspection etc. Metal properties and destructive testing, welding metallurgy, discontinuities at weld and base metal, visual inspection and other NDT methods are included in the program. The course also covers actual hands on training of visual inspection with weld replicas employing various inspection tools and gauges. The code book clinic on API 1104 is also included in the course.

NDTE 55009 Certified Expediter Training 1 Credit
This course provides a means for expediters to achieve a recognized level of proficiency in the profession through a specialized course of study in association with EMA (Expediting Management Association). This training program confirms the qualification of expediters, which is unique in the industry, yet generic enough to apply to all firms and business lines. Certification requires successful completion of the EMA Training Program, which encompasses two separate modules: the EMA Basic Training Course A-98 and the EMA Advanced Training Course B-99, culminating in a final examination.

NDTE 55010 Visual Testing Level I/II (VT) 2.4 Credits
The course is designed for manufacturers, services companies, and overhaul facilities, who require their personnel to be trained in the application of Visual Testing techniques. As well as covering all the theoretical aspects of this method, the course includes processes of improving visual inspection reliability and the use of a variety of visual equipment. The course satisfies the training hours needed for both Level I and II certification in accordance with SNT-TC-1A.

NDTE 55011 Ultrasonic Thickness Testing/UTT 1.6 Credits
Although introductory, this program offers in-depth coverage of ultrasonic theory and instrument operation for accurate thickness gauging. Lab training stresses procedural testing and proper recording of test results using state-of-the-art thickness gauges with waveform and digital display. This course satisfies the training hours needed for limited certification in accordance with SNT-TC-1A.

NDTE 55012 Positive Materials Identification (PMI) 0.8 Credits
The course covers topics of classification for alloy metals by the ASME and ASTM. Commonly used alloy base metals and welding consumables in the petrochemical industry. Materials traceability and color coding. The course also covers hands on training with portable PMI instruments.

NDTE 55013 API: 510 Pressure Vessel Inspector-Test Preparation 8 Credits
This program will help industries continually improve and ensure safety through the use of owner/user or third party inspectors specialized in pressure equipment. The course thoroughly reviews API Publications such as API-510, API RP-572, API RP-576, and API IRE Chapter II. Inspectors are certified to inspect refining and petrochemical pressure vessels in accordance with API Standard 510, Pressure Vessel Inspection Code Maintenance, Inspection, Rating, Repair and Alternation. The certification program promotes self-regulation and establishes a uniform national program that will assist state and local governments in pressure vessel regulations. Specific examination criteria simulating actual API test conditions will be utilized providing an effective study base.

NDTE 55014 API: 570 Process Piping Inspector-Test Preparation 4.8 Credits
This comprehensive course will prepare an inspector to successfully complete the API-570 Authorized Piping Inspector Certification Examination. API initiated the Piping Inspector Certification Program to provide a continued high level of safety through the use of inspectors specialized in process piping; the course thoroughly reviews API Standard 570, API RP 574, ASME Boiler and Pressure Vessel Code Sec. V & IX, ASME Code for Pressure Piping B16.5 and B31.3. The certification program promotes self-regulation and establishes a uniform program that will assist state and local governments in process piping regulations. Specific examination criteria simulating actual API test conditions will be utilized providing an effective study base.

NDTE 55015 Film Interpretation of Weldments 6.4 Credits
Prerequisite(s): None Note: Textbook is required. This is the study of radiographic film interpretation, including exploration of radiographic basics, interpretation of indications and causes of indications. Film indications are evaluated according to the structural, piping and pressure vessel codes. (NDTE 1301)

NDTE 55016 Pressure Vessel Inspection 12.8 Credits
Prerequisite(s): None Note: Textbook is required. This course covers general principles of pressure vessel inspection. It will also cover American Society of Mechanical Engineers (ASME) and American Petroleum Institute (API) documents that pertain to pressure vessel inspection; emphasis will be on preparing students to take the API 510 certification examination. (NDTE 2440)

NDTE 55017 Eddy Current Testing 9.6 Credits
Prerequisite(s): None Note: Textbook is required. This course covers the general principles of Eddy Current Testing including theory, knowledge and skills for basic examination and the effects of material properties, probe types, calibration standards and equipment selection. (NDTE 1440)

NDTE 55018 ACFM: Alternating Current Field Measurement 4.8 Credits
This is a 48 hour level I course covering electromagnetic theory; ACFM detection identification of cracks; weld inspection by the ACFM techniques; sizing for length and depth; reporting; back-up data.

NDTE 55019 Pressure Piping Inspection 6.4 Credits
Prerequisite(s): None. Textbook Required. This course covers the general principles of pressure vessel inspection. It covers American Society of Mechanical Engineers (ASME) and American Petroleum Institute (API) documents that pertain to pressure piping inspection. It prepares students to take the API 570 certification examination. (NDTE 2339)
NDTE 55020  MFL: Magnetic Flux Leakage  2.4 Credits

NDTE 55021  Ultrasonic Testing (UT I)  4 Credits
Covers the basic theory and applications of the ultrasonic techniques of materials testing covering the theoretical material from the certification test for Ultrasonic Level I American Society of Non-Destructive Testing.

NDTE 55022  Ultrasonic Testing (UT II)  4 Credits
Covers theory and applications of the ultrasonic techniques of materials testing covering the theoretical material from the certification test for Ultrasonic Level II American Society of Non-Destructive Testing.

NDTE 55023  Digital Radiography  4 Credits
Students will read and interpret film images in a general context (degree of penetration, shape recognition, light and dark regions); identify discontinuities; identify from film weldment types and configurations.

NDTE 55024  NDT Technician  13.6 Credits
This course provides the classroom training in preparation for NDT certification Surface Methods (Levels I & II), NDT Ultrasonic Testing (Levels I & II).

NDTE 55025  Introduction to Inspection Technologies  2.4 Credits
Students learn regulatory for plant safety and inspection technologies and identify codes, standards and practices the define acceptance and rejection criteria for equipment deficiencies.

NDTE 55026  Non-Destructive Testing Technician Essentials  16 Credits
The program provides classroom instruction in NDT methods in preparation for entry into the NDT career field and subsequent licensing.

NDTE 55027  NDT Comprehensive Introduction  7.2 Credits
This course is designed for incumbent workers and covers the Non-destructive testing methods and techniques including visual weld inspections, radiography, magnetic particle and liquid penetrant testing, ultrasonic flaw sizing and detection, and eddy current testing.

NDTE 55028  NDT Technician Essentials I  8 Credits
This course covers the principles of Non-Destructive Testing, terms, definition and covers surface testing and visual testing of welds and other assemblies.

NDTE 55029  NDT Technician Essentials II  12 Credits
This course covers ultrasonic testing methods of welded joints and other assemblies.

NDTE 55030  Ultrasonic Thickness Testing  4 Credits
Although introductory, this program offers in-depth coverage of ultrasonic theory and instrument operation for accurate thickness gauging. Lab training stresses procedural testing and proper recording of test results using state-of-the-art thickness gauges with waveform and digital display. This course satisfies the training hours needed for limited certification in accordance with SNT-TC-1A.

NDTE 55031  Introduction to Ultrasonics 1 & 2  9.6 Credits
Prerequisite(s): None Note: Textbook is required. The course covers the basic theory and applications of the ultrasonic techniques of materials testing covering the theoretical material from the certification test for Ultrasonic Level 1 American Society of Non-Destructive Testing. (NDTE 1405)

NDTE 55032  Inspection/NDT Survey  0.8 Credits
Survey course over current NDT inspection techniques.