Visual Testing
Outline of Instruction

Course Information

Project Type	NDT Certification
Organization	Monroe County Community College, Industrial Technology Division
Developers	Ed Schultz and Roop Chandel
Development Date	2/3/2012
Course Number	NUET 104
Instructional Level	Certificate
Instructional Area	Nuclear Engineering Technology
Division	Indusrial
Potential Hours of Instruction	45
Total Credits	2

Description
The course will train students on how to detect visible surface discontinuities, especially those found in welded joints. The fundamentals of light and vision, visual perception and different types of equipment used to detect discontinuities on the surface will be covered. More emphasis on practical welding as well as inspection of weld joints using a variety of weld gauges will be done during the practical sessions. Material attributes and physiological factors affecting the performance and judgment of the inspector will be studied along with the procedure and applicable codes for acceptance and rejection of discontinuities. Students will perform a complete series of laboratory exercises to provide hands-on training in the practice of each test procedure.

Major Units

1. Definitions and Fundamentals
2. Equipment
3. Employer-defined applications and specific procedures
4. Material attributes
5. Vision annd Lighting
6. Environmental and physiological factors
7. Visual perception
8. Acceptance / rejection criteria
9. Reports and recording

Target Population
NDT Certification is designed for two year career and technical education programs or for those with experience.

Students, Inspectors, Welders, CWI's, Technicans, Engineers and Electicians find that a career in nondestructive testing offers many opportunities, and there is a big demand for technicians and engineers trained in NDT. The NDT personnel work at various levels.

Level I technicians are only qualified to perform specific calibrations and tests, and acceptance or

rejection determinations allow little or no deviation from the procedure. Level I technicians working at this level are under close supervision, guidance and direction of a higher level tester, such as Level II or Level III. The Level I position is not the trainee level, but the first level a trainee reaches upon demonstrating ability in specific tests. They are usually trained to a specific procedure and can perform only certain types of inspections on a certain set of components.

Level II technicians are able to set up and calibrate equipment, conduct the inspection according to procedures, interpret, evaluate and document results in all the testing method(s) utilized by the certificate holder. The technician can provide on the job training for Level I and Level I Limited and act as a supervisor. The technician at this level can also organize and document the results of the inspection. They must be familiar with all applicable codes, standards, and other documents that control the NDT method being utilized.

Types of Instruction

Instruction Type	Contact Hours	Credits
Classroom Presentation	45	2

Textbooks

TBD.

Learner Supplies

Scientific Calculator.

3-Ring Binder.

Prerequisites

RDG 090 and/or ENGL-090

Exit Learning Outcomes

Program Outcomes

A. Demonstrate problem solving skills
B. Acquire a willigness to learn independently
C. Recognize effective inspection techniques
D. Demonstrate knowledge of equipment competency
E. Apply technical writing skills

General Education Outcomes

A. Communicate information in writing using the rules of standard English
B. Demonstrate an understanding of the process of scientific inquiry
C. Use computer technology to communicate information

External Standards

SNT-TC-1A, The American Society for Nondestructive Testing, Recommended Practice, Personnel Qualification and Certification in Nondestructive Testing

Course Outcomes

1. **Describe various Visual Testing methods**
2. **Identify the difference between direct and indrect methods of inpsection**
3. **Select the proper inpsection technique for a given task**
4. **Communicate terminology associated with VT method**
5. **Apply Weber's Law as it relates to VT**
6. **Prepare reports describing test results**
7. **Prepare for ANST VT Level I & II test battery examination**