# WELD 1315

**Division:** Career and Technical Education
**Department:** Industrial Technology
**Course:** WELD 1315
**Title:** Welding Inspection B
**Catalog Description:**

This course is for welding technology majors. It presents skills and techniques to assist welders to better perform their duties. Qualification testing weld procedures are studied. The course includes inspection procedures and non-destructive testing for the various welding defects.

**General Education Requirements:** N/A
**Semesters Offered:** TBA
**Credit/Time Requirement:** Credit: 1; Lecture: 1; Lab: 0
**Clock/Hour Requirements:** 15
**Offered for Non-Credit:** Yes
**Prerequisites:** WELD 1020, WELD 1313

**Corequisites:** WELD 1305

**Justification:**

This course has been approved by the program advisory committee. Course meets American Welding Society Cer tified Welding Inspector (CWI) requirements.

**Student Learning Outcomes:**

Upon successful completion, students will be able to demonstrate an increased ability to:

- interpret codes and specifications
- interpret blueprints and drawings
- obtain a working knowledge of weld symbols and non-destructive testing symbols
- perform non-destructive tests on welds.

**Content:**

Course objectives will be accomplished by providing students with additional learning experiences in the following subject areas:

- requirements for inspectors

- duties of an inspector
- understanding and working knowledge of symbols, welding specifications, and qualification of welding procedures
- qualification of welders and welding operators
    - plate and structural members
    - pipe welding
    - welding position
    - testing of qualification welds
    - qualification records
    - retests
    - standardization of tests
- weldment defects
    - dimensional defects
    - structural discontinuities
    - defective properties
- nondestructive testing of weldments
    - visual inspection
    - magnetic particle inspection
    - liquid penetrant inspection
    - radiographic inspection
    - ultrasonic inspection
    - Eddy current
    - leak tests
    - proof tests
- heat-treatment operations
    - preheating
    - interpass temperatures control
    - post heat treatments
    - controlled cooling rate
    - heat-treatment terms.

**General Education Outcomes:**

1) Read effectively, constructively, and critically.

Students will read the required text, as well as other assigned readings. Students must be able to answer questions on exams and synthesize information into laboratory experiences.

9) Respond with informed sensitivity to an artistic work or experience.

Students will visually inspect weld quality for appearance, uniformity, and consistency. Professional welding is judged heavily on the aesthetic aspect.

**Key Performance Indicators:**

Student Learning Outcomes will be assessed by two or more of the following Key Performance Indicators:

- assignments
- tests
- quizzes
- competency in subsequent courses and on the job
- visually inspect welds
- non-destructive testing procedures on weldments in future projects.

**Representative Text and/or Supplies:**

- *Welding Inspection Technology,* current edition, Education Department, American Welding Society.
- Larry Jeffus, *Welding Principles and Applications,* current edition, Delmar Publishers.

**Optimum Class Size:** 10
**Maximum Class Size:** 20

**Signatures:**

I hereby submit this course syllabus:

_____

Alan Palmer, M. Ed., Associate Professor

I hereby find this course consistent with the goals and resources of the Industrial Technology Department:

_____

Alan Hart, AAS, Instructor, Chair

I hereby find this course consistent with the goals and resources of the Career and Technical Education Division:

_____

Michael P. Medley, MBA, Assistant Professor, Dean

I have discussed the need for library resources related to this class with the person submitting the syllabus:

_____

Lynn Anderson, MLIS, Technical Services Librarian (Main Campus)

_____

Michelle Olsen, MLS, Campus Librarian (Richfield Campus)