
TITLE: Inert Gas Welding (Ferrous)  |  CREDITS: 4  |  CONTACTS: CLASS - LAB - TOTAL 2 6 4

PREREQUISITES: None

DESCRIPTION: This course covers the setup and adjustment of equipment and fundamental techniques for welding ferrous metals.

TEXTBOOK(S) OR ALTERNATIVE: Modern Welding, Chapters 1-4, 15, 16 (optional), Pat Programmed Audio-Visual Training: Hobart School of Welding Technology.

MATERIALS (specifying those to be purchased by student):
- Welding shield
- Welding gloves
- Ear plugs
- Cutting goggles
- Safety glasses

COLLATERAL READING:
- Practical Welding
- General Welding - John Wiley and Sons
- Welding Principles and Applications - Delmar

CLASS MANAGEMENT ACTIVITIES (attendance, tardies, testing, etc.):
Attendance: Students must attend a minimum of 80% of the meetings of each class. If students miss more than 20% of a class, the student will be dropped automatically by the instructor, and assigned a grade of "F". If the student wishes to withdraw from the class he/she must complete a withdrawal form found in Student Development Office. A grade of "W" will be assigned up to midterm. After midterm a grade of "WF" will be assigned if the student is not passing the course.

Tardy: Realizing that regular attendance in classes is a contributing factor toward academic success, it is also important that students arrive promptly for classes. Arriving late for a class not only disrupts a class in progress but interrupts the learning process. A tardy is defined as the arrival of the student to class after attendance has been taken. Three tardies will constitute one full absence. It is the student’s responsibility to notify the instructor after class that he/she arrived late for class. If a student leaves early from class it is also counted.

Academic Dishonesty: NETC honors the state TEC Student Code with regard to Academic Dishonesty. Students should read the Student Code and Grievance Procedure Book. Copies of the Student Code are available in Student Services. Academic Dishonesty will not be tolerated.

Classroom Etiquette: An integral part of an education is developing a sense of integrity and responsibility not only toward ourselves but also toward others. In the classroom, as on the
job or in your home, exhibiting appropriate behavior reflects on your maturity. Arriving late to class, being unprepared, unappropriate talking while class is in session, etc., negatively reflect on you and your fellow students. Please be considerate.

Student ID: It is mandatory that students wear his or her student ID at all times. The instructor will dismiss students without ID from class. The student may get his/her ID and return to class before the midpoint of the class. If the student cannot get his/her ID and return to class by the midpoint, the instructor will record the absence.

**DISABILITIES STATEMENT:** Students with disabilities are encouraged to contact the Vice President for Student Services to discuss needs or concerns as they pursue an academic program and participate in campus life. The Vice President for Student Services will provide guidance regarding official documentation of disabilities and/or accommodation of needs. (See Catalog)

**RESOURCES (A-V, persons, tools/equipment):**

**COURSE TOPICAL OUTLINE (List topics and sub-topics of course) and Calendar or approximate length of time devoted to topic.**

1. Safety
   a. Fumes and Gases
   b. Harmful Rays
   c. Electrical Components

2. Welding Machines
   a. Equipment Setup
   b. Proper Care of Equipment
   c. Joint Preparation
   d. Amperage Setting
   e. Trouble Shooting

3. Testing Welds
   a. How
   b. Why

4. Flat Welding on Mild Steel Plate
   a. Electrode Selection
   b. Amperage Setting
   c. Flat Stringer Beads

5. Vertical Welding on Mild Steel Plate
   a. Electrode Selection
   b. Amperage Setting
   c. Vertical Stringer Beads

6. Horizontal Welding on Mild Steel Plate
   a. Electrode Selection
   b. Amperage Setting
   c. Horizontal Stringer Beads
7. Overhead Welding on Mild Steel Plate
   a. Electrode Selection
   b. Amperage Setting
   c. Overhead Stringer Beads

8. Pipe Welds on Mild Steel
   a. Electrode Selection
   b. Amperage Setting
   c. Position of Weld (Bellhole & Horizontal or Arkansas Bellhole).

9. Mig Welding
   a. Safety
   b. Equipment Setup
   c. Care of Equipment
   d. Amperage Setting
   e. Trouble Shooting

10. Mig Welding on Mild Steel
    a. Flat and Horizontal Stringer Beads
    b. Square groove tee joint flat position
    c. Square groove, fillet weld, horizontal position

**STUDENT LEARNING OUTCOMES/OBJECTIVES OF COURSE:**
1. Safe work habits in welding lab.
2. Importance of safety in Tungsten Inert Gas Welding.
3. Use and care of Tig and Mig equipment.
4. Operation and setup of Tungsten Inert Gas and Metallic Inert Gas Welding.
5. Procedures for applying TIG and MIG to different metals.
6. Ability to select proper filler wire for job.
7. Ability to distinguish between good and bad weld beads.

**INSTRUCTIONAL METHODS TO COMPLETE LEARNING OUTCOMES/OBJECTIVES:**
1. Audio-Visual Instruction
2. Lab Projects
3. Demonstrations
4. Small Group Discussions

**EVALUATIVE METHODS TO APPRAISE LEARNING OUTCOMES/OBJECTIVES:**
1. Test scores
2. Quality of projects
3. Care of machines and equipment

**GRADING SCALE:**
- 93 – 100 = A
- 86 – 92 = B
- 78 – 85 = C
- 70 – 77 = D
- BELOW 70 = F
The following is a progress report on your performance in WLD 132 for the objectives of the course:

E=Excellent    S=Satisfactory    N=Needs Improvement    U=Unsatisfactory

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GRADING RECORD FOR WELDING 132

Student Name:______________________________  Term:________________________

INSTRUCTOR:

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