

REEDLEY COLLEGE
Manufacturing Technology
MFGT 61 –Welding 2 (Sch.# 50386)
Rm.# Ind. 11&19 --- M-Th 1:00-5:15pm --- Spr 2010
9 week class --- Jan 11 – Mar 11

INSTRUCTOR: Robert Fransen
Industrial Technology Building – Welding Department
Office: Room 22
Phone: 638-3641, ext. 3253
E-mail: robert.fransen@reedleycollege.edu
Office Hours: M-Th -12:30pm F -11:00 am

COURSE DESCRIPTION

MFGT 61 – Welding 2 (Intermediate Welding) 4 Units 1 Lecture and 8 Lab Hours per week
Prerequisites: MFGT 60

This course is a continuation of basic welding. Emphasis is placed on out-of-position work (horizontal, vertical and overhead.) Processes include Stick, Mig, Flux core, Tig, and cutting processes.

1. Advanced shop welding in MIG and Innershield welding on mild steel, stainless steel and aluminum. Welding will be done in all positions.
2. Advanced shop welding in Tig on mild steel, stainless steel and aluminum.
3. Advance shop welding practices in electric arc welding (SMAW) on mild steel plate and pipe. Welding will be done in flat, horizontal, vertical and overhead position with emphasis on working towards AWS plate certification.
4. Advance shop oxy-acetylene cutting practice using hand torch, straight line cutter, optic cutter and plasma cutting equipment.
5. Student will fill out a job application and review basic job interview skills.

EXPECTED OUTCOMES

1. Students will be able to select and use the proper tools correctly as needed in the Students will be able to select and use the proper tools correctly as needed in the welding field.
2. Students will be able to select, adjust and use properly the welding wire, rods and welding power sources.
3. Students will be able to perform fusion welds on plate and pipe in, Mig, Tig, SMAW and inner shield in the flat, horizontal, vertical and overhead positions on mild steel, stainless steel and aluminum.
4. Students will be able to use the oxy-acetylene and plasma cutting equipment with proficiency.
5. Students will understand procedures to acquire college AWS welding certifications.
6. Students will possess the needed skills for successful job interviewing.

III. COURSE CONTENT

A. UNIT TITLES

- Introduction--Safety
 - Ch 1 - An Essential Skill
 - Ch 2 - Welding Safety
 - Ch 3 - Joint Design and Welding Terms
- Welding Positions
 - Ch 13 - Horizontal
 - Ch 14 - Vertical
 - Ch 15 - Overhead
- Gas Tungsten Arc Welding - GTAW
 - Ch 16 - GTAW Equipment
 - Ch 17 - GTAW Procedures
 - Ch 18 - GTAW Applications
- Gas Metal Arc Welding – GMAW (Review)
 - Ch 19 - GMAW Equipment
 - Ch 20 - GMAW Procedures
 - Ch 21 - GMAW Applications
- Flux Cored Arc Welding – FCAW (Review)
 - Ch 22 - FCAW
- Welding Technology
 - Ch 39 – Weldability of Carbon and Alloy Steels
 - Ch 41 – Weldability of Stainless Steels
 - Ch 42 – Weldability of Non ferrous Metals
 - Ch 44 – Welding symbols
- Job Applications, Resume, Interview Techniques

*content and order may be changed as deemed necessary by instructor

METHODS OF EVALUATION

1. Written Tests	(20%)	200 points
2. Homework	(10%)	100 points
3. Daily Skills Objectives	(60%)	600 points
5. Time Clock Usage and Clean-up	(10%)	<u>100 points</u>
	(100%)	1,000 points

A = 900-1,000
B = 800-899
C = 700-799
D = 600-699
F = 0-599

- Homework must be turned by the group due date, or it will be penalized by 30%.
- Homework that is not reasonably complete will not be accepted.
- Homework **will not be accepted more than 1 class late.**
- Daily skills objectives **must be completed by 3/10/10.**

ATTENDANCE & DAILY PARTICIPATION (It affects your grade)

Participation is very important. You must be in class in order to participate and complete all work. If you miss a class, you need to make up the time. This may be done any time the shop is open, day or evening, regardless of the instructor. (It is necessary to get permission from the instructor who is teaching the class in session and have him sign the time clock stamp.)

Your participation grade will be lowered as absences increase, regardless of total points.

No absences	=	Extra Credit (add 25 pts. to test grade)
1 – 4	=	No deduction
5	=	No higher than B grade
6	=	No higher than C grade
7	=	No higher than D grade
8	=	Will not pass class, F grade
3 tardies	=	1 absence

- There are no excused absences
- 2 hours made up count for 1 hour missed
- If you miss more than 4 classes in first half of the class (4.5 weeks), you will be dropped.
- Roll will be taken verbally and by use of the time clock.
- To receive daily credit, you must punch in during the 15 minute time period prior to class starting and after class releases.
- You are required to find out from the instructor any material missed during absence.
- Test may be made up at the instructor’s discretion.

IMPORTANT DATES

January	11 (M)	First day of class
January	18 (M)	Martin Luther King Day (Holiday)
February	9 (T)	Last day to drop
February	12 (F)	Lincoln Day (Holiday)
February	15 (M)	Washington Day (Holiday)
March	10 (W)	Last day to weld
March	11 (Th)	Final Exam – 1:00-3:00 p.m.

GENERAL POLICIES

- You are responsible to bring required materials to class. Textbooks and notebooks are required.
- You must wear safety equipment during lab (you will be counted absent if you do not have the equipment to work in lab.)
- Lockers will be provided by the school for storage of projects and required materials. Students will provide locks.
- Supplies will be provided by the school for required objectives. Projects to be removed from the shop will require all material bills to be paid, as well as instructor's permission.
- School policy prohibits smoking, dipping snuff, eating, and drinking in the classroom and in the lab.
- Any conduct that disrupts or distracts the class or is dangerous will not be tolerated.
- Willful violations of any safety rule that endangers the health of yourself or others in the class or shop will result in immediate dismissal from the class.
- Do not leave the classroom or shop area without the instructor's permission.
- The content, order and policies in this syllabus may be changed if deemed necessary by the instructor.

“If you have a verified need for an academic accommodation or materials in alternate media (i.e.: Braille, large print, electronic text, etc.), per the Americans With Disabilities Act or Section 504 of the Rehabilitation Act, please contact the instructor as soon as possible.”

TEXT AND MATERIALS

Textbook: Welding Skills by B.J. Moniz & R.T. Miller, American Tech Publishers, Inc., 3rd edition.

Pencil/pen, paper

3-ring binder with pockets

Lab Equipment Required:

- Work Clothing – Preferably 100% cotton tight weave, good fitting without holes or frayed edges
 - Long sleeve shirt
 - Long pants (coveralls are OK)
 - Work shoes which cover your feet well. (Preferably leather)
- Safety glasses with side shields
- Welding gloves – two pair (one heavy weight and one light weight)
- Pliers to carry hot metal
- Wire cutters for MIG wire
- Tip cleaner for torch
- Flint striker
- Soapstone or silver pencil
- Oxy-acetylene goggles with #5 lens (must be able to wear with safety glasses)
- Arc welding helmet with #10 lens (preferably flip front)
- Leathers
- Chipping hammer
- Wire brush
- Tape measure
- Skull cap (welder's cap)
- Ear Plugs

SUGGESTED SOURCES OF EQUIPMENT

Fresno Oxygen & Welding Supply

245 M Street 233-6684

2742 Clovis Avenue 292-1234

6101 N. Blackstone 432-9353

Visalia 2239 E.Main 733-2335

Melo's Gas & Gear

2811 E. Church Ave 486-8110

Praxair Gasses & Equipment

2701 E. Jensen 445-0131

Sierra Air Gas

2320 E. Church Avenue 268-8651

Weco Supply Co.

3735 E. Ventura Avenue 268-0161

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