

REEDLEY COLLEGE
I.T. DIVISION
MFGT. 32A BASIC WELDING (OXY-ACETYLENE WELDING, CUTTING PROCESS, SMAW-ARC)
T-TH 8:00 AM - 12:50 PM

INSTRUCTOR: Mr. Studebaker
Industrial Technical Building—Welding Department
Office: Room 23
Phone: 638-3641, ext. 3253

DESCRIPTION: Basic Welding (Oxy-Acetylene, SMAW, Cutting Process). 5 units, 10 hours weekly

1. Basic shop welding practices in oxy-acetylene fusion welding on plate, pipe and tubing of carbon steel, stainless steel and cast iron, and brazing on C.S. and cast iron. Also hard facing with electric arc process.
2. Basic shop oxy-acetylene cutting practices using: hand torch, straight line cutter and optic-cutter.
3. Basic shop welding practices in electric arc welding (SMAW) on C.S. plate and pipe. Welding will be done in flat, horizontal, vertical and overhead position with emphasis on working towards AWS plate certification bends.
4. Basic pipe joint cutting, fitting and tacking procedures.
5. Student will learn safety procedures as needed to work in both school and industrial shops.

EXPECTED OUTCOMES:

1. Students will be able to select and use the proper tools correctly as needed in the welding field.
2. Students will be able to perform fusion welds on plate, pipe and tubing with the oxy-acetylene torch, as well as braze both C.S. and C.I.
3. Students will be able to perform fusion welding on plate with the SMAW process in the flat, horizontal, vertical and overhead positions as time will allow.
4. Students will be able to use the oxy-acetylene hand cutting equipment with proficiency.
5. Students will be able to cut and fit 5 basic pipe joints with the use of pipe templates.
6. Students will be able to do electric arc hard facing on C.S.
7. Students will know the correct safety procedures for working in both school and industrial shops.

REQUIRED BACKGROUND: Prerequisite - none

MINIMUM STUDENT MATERIALS: (Student Purchased)

APPROXIMATE COST

1. Textbook - Welding Skills - R.T. Miller
2. Student Workbook - Welding Skills - J.F. Gosse
3. Safety Booklet
4. Notebook - 3 ring and pencil
5. Highlight felt pen
6. Safety glasses
7. Ear plugs
8. Gloves
9. Helmet
10. Goggles
11. Shop coveralls
12. Tape measure - 16' or 20'

NO COST
NO COST
NO COST
NO COST
NO COST

TOTAL

<u>HOW CLASS WILL BE CONDUCTED</u>	<u>GRADING</u>	<u>POINTS</u>	<u>PERCENT</u>
1. Group lectures, tours, demonstrations	1. Required welding assignments from progress chart	2200	34%
2. Individual instruction	2. Student manual (workbooks)	1775	26%
3. Lab work	3. Quizzes and exams	725	9%
4. Workbook, quizzes, exams	4. Participation, attendance and lab cleanup	2065	31%
5. Safety program			
TOTAL		6765	= 100.00%

ATTENDANCE:

Roll will be taken through the use of a time clock. Each student is expected to punch in at the beginning of each class, and out at the end of each class day.

Any student missing more than 3 days per each 9 weeks of the class, without prior permission, will be counseled by the instructor and if the student misses an additional day, he or she may be dropped from the class.

You are required to find out from the instructor any material missed during absence. Tests may be made up at the instructor’s discretion.

Do not leave the classroom or shop area without the instructor’s permission.

GENERAL POLICIES:

You are responsible to bring required materials to class. Textbooks and notebooks will be required.

Lockers will be provided for storage of projects and required materials. Students will provide locks.

Supplies will be provided by the school for required projects. Projects to be removed from shop will require all material bills to be paid.

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.

See additional “Policies & Procedures” handout sheet.

*** DROP DATE: LAST DAY TO DROP THIS CLASS WITHOUT PENALTY WILL BE THE FRIDAY OF THE 9TH WEEK: FRIDAY, OCTOBER 15, 2004.**

TEXT: Welding Skills

WORKBOOK: Welding Skills - Workbook

SAFETY BOOKLET

<u>Week</u>	<u>Topic</u>	<u>Text Chapter</u>	<u>Workbook Chapter</u>	<u>Workbook Page</u>	<u>Agenda</u>
1-2	An Essential Skill	1	1	1-4	Lect. - Demo.
	Welding Safety	2	2	5-8	Safety Instructions
3-5	Oxy-Acetylene Equipment	4	4	15-18	Lect. - Demo.
	Oxy-Acetylene - Setting Up	5	5	19-22	Lect. - Demo.
6	Oxy-Acetylene - Flat Position	6	6	23-26	Lect. - Demo.
7-8	Oxy-Acetylene Cutting Operations	25	25	93-96	Lect. - Demo.
9-11	Joint Design & Terms	3	3	9-14	Lect. - Demo.
12-13	SMAW-Machines & Access.	8	8	29-32	Lect. - Demo.
14-15	SMAW-Stricking ARcs	10	10	37-40	Lect. - Demo.
	Continuous Beads	11	11	41-44	Lect. - Demo.
	Flat Position	12	12	45-48	Lecture
	Weld-Selecting Electrodes	9	9	33-36	Lect. - Demo.
16	Reading Weld Symbols	44	44	165-166	Lecture
17	Review & Lab Cleanup	---	---	---	Classroom & Lab
18	Final Exam Week	---	---	---	-----

Student Workbook Assignments:Date to be completed and turned in:

Chapters 1, 2	August 26
Chapters 4, 5, 6	September 9
Chapter 25	September 23
Chapter 3	October 7
Chapter 8, 10	October 21
Chapters 11, 12	November 4
Chapter 9	November 18
Chapter 44	December 2
Final day to turn in any book assignments	December 7

*Any assignment turned in up to one week late will receive only 50% credit for the assignment. Any assignment more than one week late will receive no credit!

Workbook questions point values:

- T & F = 3 points each
- Multiple choice = 4 points each
- Matching = 3 points each

MFGT. 32A SEMESTER REQUIREMENTS FOR LAB AND LECTURE

<u>Workbook:</u>	<u>Points</u>
Chapters 1, 2	246
Chapters 4, 5, 6	431
Chapter 25	130
Chapter 3	216
Chapters 8, 10	254
Chapters 11, 12	254
Chapters 9, 44	244
Safety Test	175
Quizzes - Oxy fuel welding process, SMAW process, electrodes, symbols, cutting process, brazing, hard facing, mid-term exam	350
Final Exam	200
	(TOTAL - 2,500)
<u>Welds from Progress Chart:</u>	
Oxy-acetylene Fusion - # 1-7	600
Oxy-acetylene Brazing - # 8-12	200
Cast Iron Repair Oxy-acetylene - # 13	50
SMAW - # 22-30	600
AWS Plate Certification Face & Root Bends - # 15-16	200
Hard Facing - Electric Arc - # 14	50
Pipe Joint Cutting, Fitting and Tacking - # 47-51	500
Cutting Exercises: Any cutting exercises completed this semester will be EXTRA CREDIT POINTS.	
	(TOTAL - 2,200)
<u>Attendance:</u>	
Deduct 25 points for each absence	300
Deduct 25 points for each tardy	300
Time clock usage - 40 pts @ 16 weeks	640
Weekly clean-up - 20 pts @ 16 weeks	320
End of semester clean-up and preventative maintenance	250
<u>Class Participation:</u>	
Following instructions and working with other students	255
	(TOTAL - <u>2,065</u>)
	GRAND TOTAL - <u>6,765</u>

Listed above are the total number of all possible points that can be earned. The following percentages are needed to earn the respective grade.

- 6089 to 6765 - 90% = A
- 5412 to 6088 - 80% = B
- 4736 to 5411 - 70% = C
- 4059 to 4735 - 60% = D
- 4058 below - 59% = F

*Extra points may be earned during the semester by attending field trips, doing a tech. report, or shop maintenance outside of scheduled class or lab time. Maximum of 10% of the Grand Total Points (676 pts.) can be earned.