

Ornamental Iron Class - WVC

Course Procedure:

First Session:

1. Review of Weld Lab Rules and WVC Safety Manual
2. Shop Housekeeping
3. Tool - equipment items: Procedure for training and approval for lab tools and equipment.
4. Introduction to Scotsman Metal Worker – view video & written safety information.
Students may then cut their metal into six inch long coupons to weld on.
5. Introduction to wire feed welding machines and auto-darkening helmets. The Instructor's Goal is to have everyone weld for a few minutes at the end of this first session.

Second Session:

1. Everyone welds for first half of session. Each person will be assigned an area/bay with a welding machine in it.
2. Second Half of Session: Students will be shown the correct and safe way to operate the small hand held disc grinders and the Plasma Cutters. Each student then must demonstrate that he/she can operate these grinders in a safe and correct manner.

Third Session:

1. Students should spend this complete session learning how to weld and plasma cut.
2. Each student is asked to plasma cut a name plaque to take home.

Fourth Session:

1. The Instructor will discuss how to plan a project:
 - A. How to start with a three dimensional drawing or sketch...
 - B. How to convert the drawing into one that is drawn to "scale". This means the Scale drawing is an exact miniature of the "real thing".
 - C. How to determine a material list.
2. Introduction to common hand tools used in metal fabrication.
 - A. How to use a tape measure
 - B. How to use different metal squares.
 - C. How to use turnbuckles and clamps, etc.
3. How to convert a drawing into a fabrication layout on the steel work table.
4. Overview of how Geometry and Algebra is used in fabrication..
5. The Instructor will fabricate a project demonstrating these subjects covered in class.

Activity For Fifth and Sixth Sessions: “Projects”!

1. Each student should give the Instructor -- a written description or drawing of the project they desire to build in class. (for approval)
 - A. The project must be within the student’s skill level.
 - B. The project must be simple enough that it can be built in the class time limits.
 - C. The project must be small enough to be done in the weld lab.
 - D. Remember – the Instructor can not do your project for you. He can’t use a whole Class session (or more) to build your project...it prevents him from helping others.
2. The Instructor will assist each student in developing their material list.
3. The Instructor will give oversight and direction to each student as he/she does their project.

Welding Outlet Stores: Oxarc and Norco

Steel Outlet Stores: Columbia River Steel and Oxarc
Remember to ask for student discounts at these places...

General Class Information:

1. Lab equipment that Ornamental Iron students may use:
 - A. Wire Feed welding machines.
 - B. Plasma cutters
 - C. Hand held disc grinders
 - D. Ornamental Iron benders
 - E. Scotsman Metal worker (shear function only) (use of other functions requires training)
 - F. Oxy/Acetylene cutting torch – (requires instructor’s training and approval)
2. There are other equipment items in the Lab which are not on the “approved use list” for Ornamental Iron students. Please do not attempt to use them. Items like the Ellis Band saws and the Hydraulic Pipe bender have the ability to cause serious or fatal injuries to humans. If you need items cut in the saw... the Instructor will do it for you . or give you training on it.
3. Return Students: Please be aware that there are usually return students in the class.
 - A. They are allowed to start working the first session-while new ones are in training.
 - B. They might be doing advanced projects that are beyond beginner’s skill level.

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4. Please observe the time and cease work fifteen minutes before the end of class in order
To assist in sweeping and cleaning the Lab.
5. Each Quarter there are at least 40 to 80 students using the weld lab. So....
 - A. Do not leave your personal items and metal in the lab.
 - B. Do not use items or metal that might be laying in the lab. Do not use steel – metal that
Might be laying in various places around the Lab.
6. Steel that you may use is piled on the metal roller cart – usually located in the main Weld
Lab room near the Scotsman Metal Worker.
7. Remember that welding and cutting creates high temperatures in the base metals being used.
 - A. Always wear gloves – assuming the metal you are about to pick up is hot!
 - B. Always cool smaller metal pieces in the water barrel. Do not leave hot metal anywhere.
8. WVC does not allow students to attend classes they are not registered in.

Check out the web site of the manufacturer of our ornamental metal benders....

www.shopoutfitters.com watch their videos.... Also fun site www.yarbirds.com

Personal Items Needed for Class:

1. Safety glasses – clear – non tinted.
2. Ear muffs – to use when grinding - in addition to WVC supplied ear plugs
3. Comfortable leather gloves – covering hand up just past wrist. WVC supplies the
Heavier gloves that extend up the arm past the wrist.
4. Welder's cap or scarf – to protect the hair and head from heat and sparks.
5. Leather shoes
6. Jean type long sleeve shirts and full length pants
7. Particle mask – to use when in the grinding room
8. Wire cutters to use when wire feed welding.
9. Pliers or vise grips to pick up hot metal.
10. Ten feet of steel – 1/8th inch thick by 2 inches wide. Ask to have it cut into five
Foot lengths for easier transport.
11. Tape measure, black fine point sharpies, lead pencils, and a tablet of graph paper – get
The style that is 4 squares per inch... tape measure

Items needed for class:

There are several local retail stores that sell welding related items. Some of them give WVC Student discounts. I recommend the two previous listed in this syllabus. The sales people are familiar with these listed items...and therefore sell you the same items all of the other WVC welding students are using... I am sending a picture with this syllabus...It will give you a visual of what you need. Ignore the long blue gloves. You also may want to buy the GMAW book and MIG tool. The book is available in the WVC bookstore should you feel the need for more detailed directions in the type of welding done in this class.