NORTHEAST IOWA COMMUNITY COLLEGE

Course Syllabus

Course Number and Name: Flame/Plasma Cutting Fundamentals WEL:434

Semester: Fall 2015/16

Classroom & Class Time:

D-223

LECTURE HOURS: 8.00

LAB HOURS: 32.00

Instructor Information

Name David Corbin

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Office Location Hempstead High School Dubuque, Iowa

Office Hours 1:30 - 2:30

Communication dcorbin@dbqschools.org

Course Information

Course Description : A study will be made of the history and principles of material cutting, as well as the nomenclature of the equipment. Procedures such as cutting, beveling plates, and scarfing plates are practiced.

GENERAL COURSE GOAL: The student will be familiar with and practice safety procedures related to the flame cutting and plasma cutting processes. The student will properly setup manual flame and plasma cutting equipment, perform various cutting procedures, and trouble shoot cutting processes.

Course Objectives:

A. Cut with Oxyacetylene

At the end of the unit, the student will be able to:

1. Match terms related to oxyacetylene cutting with their correct definitions.
2. Select true statements concerning characteristics of oxyacetylene cutting.
3. Identify parts of an oxyacetylene cutting torch.
4. Complete statements concerning why cutting tips are designed as they are.
5. Complete a list of rules for cutting tip selection.
6. Complete statements concerning cleaning cutting tips.
7. Match tip cleaning tools with their uses.
8. Complete a list of rules for tip use.
9. Complete statements concerning metal preparation for oxyacetylene cutting.
10. Arrange in order the steps for properly starting a cut.
11. Select true statements concerning techniques for restarting a cut.
12. Complete statements concerning basic technique for cutting straight lines.
13. Complete statements concerning guidelines for controlling kerf and drag.
14. Complete a list of major causes of poor oxyacetylene cutting
15. Complete a list of elements of a good cut.
16. List reasons for poor cuts.
17. Complete definitions of working surfaces recommended for oxyacetylene cutting
18. Select true statements concerning manifold systems and their use with oxyacetylene cutting and welding.
19. Complete a list of special safety requirements for oxyacetylene cutting.
20. Complete a list of characteristics of tractor type cutting machines.
21. Select true statements concerning characteristics of hand guided cutting machines.
22. Complete a list of characteristics of pipe beveling machines.
23. Select true statements concerning characteristics of shape cutting machines.

24. Solve problems concerning eye protection required for oxyacetylene cutting.

Demonstrate the ability to:

25. Set up equipment for oxyacetylene cutting.
26. Turn on, light, and adjust a cutting torch to a neutral flame and turn off cutting equipment.
26. Make 90 degree cuts on mild steel and restart a cut.
27. Make a flame beveled cut on mild steel plate.
28. Cut a hole in mild steel
29. Lay out a pattern on mild steel plate and cut pattern to specifications.
30. Set up and cut a pipe bevel by hand.
31. Set up and cut a 30 degree bevel with a tractor type torch

B. Cut with Plasma Cutter

At the end of the unit, the student will be able to:

1. Match terms related to plasma cutting with their correct definitions.
2. Select true statements concerning characteristics of plasma cutting.
3. Identify parts of a plasma cutter.
4. Disassemble and reassemble a plasma cutting torch.
5. Complete statements concerning metal preparation for plasma cutting.
6. Complete statements concerning basic technique for cutting straight lines.
7. Complete a list of major causes of poor plasma cutting.
8. Complete a list of special safety requirements for plasma cutting.
9. Solve problems concerning eye protection required for plasma cutting

Required Materials

1. **Welding Helmet**
2. **Welding gloves**
3. **Welding pliers**

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Methods of Assessment

1. **Welding coupons**
2. **Written testing**
3. **Weld testing Physical**
4. **Student Lab Activities**

Grading Scale and Procedures

A 93 - 100	**C 73 - 76**
A- 90 - 92	**C- 70 - 72**
B+ 87 - 89	**D+ 67 - 69**
B 83 - 86	**D 63 - 66**
B- 80 - 82	**D- 60 - 62**
C+ 77 - 79	**Below 60 F**

Methods of delivery

1. Audio visual materials
2. Computer software
3. Discussion
4. Lecture
5. Projects
6. Readings
7. Role plays
8. Simulations
9. Small group activities
10. Student-instructor conferences may be scheduled as needed
11. Tests and other evaluation devices

12. Written assignments

Course Calendar

1. **September 1, 2015 ---- Jan. 15, 2016**

Course Policies

Attendance/Participation - Hempstead school policies will be followed

Academic Dishonesty - Hempstead school policies will be followed
(definition and consequences)

Late Work

Missing Assignments

Makeup Testing

1. **Missing assignments and testing arrangements shall be made by the student with in three days after returning to class**

Classroom Conduct

Cell Phone/Text Messaging Usage

1. **Cell phones usage is not allowed in class**
2. **Refreshments and food/snacks are not allowed in class / labs**

Laptop Use

1. **NA**

Tape Recording

1. **NA**

Behavior

1. **Hempstead student classroom policies will be enforced**

Emergency Procedures

1. **Fire and tornado drills and policies are posted in the classroom and lab areas**