

## Plasma Arc & Oxy Acetylene Cutting Syllabus

**Time:** 16 hours

**Maximum Class Size:** 8

**Prerequisites:** None

**Course Description:** Laborers may be called upon to cut metal using Plasma Arc and Oxy Acetylene cutting equipment. In this course, participants will learn to don proper PPE and to identify and describe the proper use of tools and materials for these scopes of work. The participants will learn how to prevent possible hazardous situations that may arise when using both plasma arc and oxy-fuel cutting equipment. In addition, they will practice setting-up, dismantling, cleaning and proper storage of all components of the plasma arc and oxy-fuel equipment. Ample time will be given to practice cutting metal using both systems.

### Goals/Objectives/Student Learning Outcomes:

- List 4-6 Personal Protective Equipment (PPE) items needed during plasma arc cutting operations.
- Describe the safety precautions for the plasma arc cutting work area.
- Identify at least 1 hazardous situation that may occur in areas where electrical power is used
- Describe proper fire protection, precautions, and procedures in plasma arc cutting.
- Demonstrate correct set-up, inspection and ignition of the plasma arc torch.
- Demonstrate the same use of the plasma arc torch by making cuts.
- List 4-6 PPE items needed during oxy-fuel cutting operations.
- Describe the safety precautions for the oxy-fuel torch cutting work area.
- List at least one hazardous situation in which oxygen should never be used.
- Demonstrate correct set-up, inspection, and ignition of an oxy-fuel torch.
- Describe proper fire protection, precaution and procedures in oxy-fuel cutting.
- Demonstrate the same use of the oxy-fuel torch by making cuts on metal.

### Standards

- |                   |                               |
|-------------------|-------------------------------|
| • 29 CFR 1926.21  | Safety Training and Education |
| • 29 CFR 1926.28  | Personal Protective Equipment |
| • 29 CFR 1926.52  | Occupational Noise Exposure   |
| • 29 CFR 1926.150 | Fire Protection               |

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- 29 CFR 1926.151 Fire Prevention
- 29 CFR 1926.152 Flammable and Combustible Liquids
- 29 CFR 1926.350 Oxy-Gasoline Cutting

### Classroom Rules and Procedures

- All classes begin at 6:30 am and end at 3:00 pm
- Upon entering classroom, all participants must sign in and be seated by 6:30 am
- Class will consist of a combination of lecture, video, demonstration, coached group exercises, individual exercises and assessment.
- Students are required to report to class ready to work and maintain the provided PPE

### Textbooks/Readings/Materials

- LIUNA Plasma Arc Cutting PG/IG
- LIUNA Personal Protective Equipment PG/IG
- LIUNA Fire Watch PG/IG
- LIUNA Hearing Protection PG/IG
- LIUNA Heat Stress IG/PG
- 29 CFR 1926.102 (A) (5) OSHA Standard for eye and face protection
- 20-question Plasma Arc & Oxy Acetylene Exit Exam
- Plasma Arc & Oxy Acetylene Hands-on Evaluation

### Tools/Equipment/Other Materials

- Face protection for filter lens shade number
- Portable plasma arc cutting unit
- plasma arc cutting unit air line
- plasma arc cutting unit torch handles
- plasma arc cutting unit cutting tips
- Oxy-fuel cutting torch system
- Oxy-fuel cutting torch system regulators
- Oxy-fuel cutting torch system torch handles
- Oxy-fuel cutting torch system cutting tips
- Oxy-fuel cutting torch system striker
- Stainless steel sheet, varied size and thicknesses

### Personal Protective Equipment

- 10 pairs of leather cutting gloves

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- 10 pairs of Safety Glasses
- 16 pairs of Ear plugs
- 10 hard hats
- 10 leather jackets
- 10 leather chaps
- 10 number 8 face shields

### Course Requirements

To receive credit for the course, participants must:

- Be present for full sixteen hours
- Participate in all classroom exercises
- Pass a written exam
- Pass a hands-on exam

### Course Policies

- Participants must be on-time and ready to work.
- Participants must return from breaks on-time.
- Participants must participate in each exercise and assignment
- Participants who are on “light duty” are not allowed to take this course due to the physically demanding requirements.

### Assessment and Grading

Participants will be assessed on the following:

- All written exams must be passed with a score of 80% or above.
- All hands-on exercises are graded on performance and participation. They are pass/fail and must be passed with a score of 80% or above.

### Safety

Failure to maintain and use PPE may result in dismissal from the course.