Student Syllabus

Course Title: Introduction to Welding Metallurgy-TIG
Course Code: WLDG 1006 – Course 2
Course Length: 30 hours

Course Description: Instruction in safety, welding and cutting processes, the physics of welding, joints and positions and guided practices with oxy-fuel gas cutting and welding, Gas Tungsten Arc Welding (GTAW).

Learning Outcome:
Identify hazards in a welding lab
Assemble all of the components of a GTAW machine
Set flow rates on welding gas
Identify the two adjustments used to adjust a GTAW machine
Demonstrate proper technique using GTAW in the 1G, 2G and 3G positions
Demonstrate proper technique using GTAW in the 1F, 2F and 3F positions

Pre-requisites: GTAW course 1

Course Structure: Content: 40 hours
Shop Safety 1.5
Gas Tungsten Arc Welding (GTAW) 32
Equipment, Supplies 1.5
Machine adjustment 2
Assessments 3

Schedule: 20 three hour sessions or any combination for 40 hours of instruction.
6:00 PM – 9:00 PM or as scheduled

Evaluation: Student Assessments, Passing 70%

Books: New Lessons in ARC WELDING

Reference: N/A
Course Outline

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Delivery Method: Small group discussions/Demonstrations/Classroom

Audience: Intermediates

Pre-requisites: GTAW Course 1

Course Structure:

<table>
<thead>
<tr>
<th>Content</th>
<th>Duration</th>
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<tbody>
<tr>
<td>Shop Safety</td>
<td>1.5</td>
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<tr>
<td>Gas Tungsten Arc Welding (GTAW)</td>
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<td>Machine adjustment</td>
<td>2</td>
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<tr>
<td>Assessments</td>
<td>3</td>
</tr>
</tbody>
</table>

Schedule: 20 three hour sessions or any combination for 40 hours of instruction. 6:00 PM – 9:00 PM or as scheduled

Evaluation: Student Assessments:
- GTAW safety, setup and parts identification test, 1G test plate, 1F test plate
- GTAW safety, setup and parts identification test, 2G test plate, 2F test plate
- GTAW safety, setup and parts identification test, 3G test plate, 3F test plate

Books: New Lessons in ARC WELDING

Reference: N/A
### Lesson Plan

<table>
<thead>
<tr>
<th>Session</th>
<th>Topic</th>
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</thead>
</table>
| Session 1 | Introduction  
Safety  
Equipment, supplies |
| Session 2 | Machine adjustment |
| Session 3 | GTAW |
| Session 4 | GTAW |
| Session 5 | GTAW |
| Session 6 | GTAW |
| Session 7 | GTAW |
| Session 8 | GTAW |
| Session 9 | GTAW |
| Session 10 | GTAW |
| Session 11 | GTAW |
| Session 12 | GTAW |
| Session 13 | GTAW |
| Session 14 | Final Assessments  
Issue Certificates of Completion |

### C. Closing: Re-Cap

Content:  
Shop Safety  
Gas Tungsten Arc Welding (GTAW)  
Equipment, Supplies  
Machine adjustment  
Assessments

### D. Evaluation:  
Practical Assessments