COURSE SYLLABUS

COURSE NUMBER AND TITLE:
WLDG 1430 – Introduction to Gas Metal Arc Welding

COURSE (CATALOG) DESCRIPTION
A study of the principles of gas metal arc welding, set-up and use of GMAW equipment, and safe use of tools and equipment. Instructions in various joint designs.

MAJOR COURSE REQUIREMENTS:
A. Safety and Health of Welders
B. Introduction to Gas Metal Arc Welding
C. Identify Shielding Gas & Filler Wire
D. Installation and Maintenance of Welding Equipment
E. Welding Positions
F. Stringer Beads
G. Fillet Welds
H. Groove Welds
I. Stress Bend Test
J. Standard of Acceptability

In each unit you will be given a lecture/demonstration and then be expected to perform the assignments for each unit. Each assignment will be demonstrated and explained so that you can accomplish the lab project associated with the assignment. After each unit there will be a knowledge exam and a performance exam. Each exam is based on the information discussed during the lecture, the reading assignments and the lab assignments given. See attached Training Objectives and Schedule Attachment

LEARNING OUTCOMES:
By the end of this course the student will be able to:
A. Describe welding positions with various joint designs on plate.
B. Weld various types of structural material, apply safety rules and perform visual inspection.
C. Describe the effects of welding parameters in GMAW.
D. Troubleshoot equipment used and diagnose welding problems.
MAJOR COURSE LECTURE, TOPICS
DESCRIPTION/REQUIRED/RECOMMENDED READINGS/ELECTRONIC
RESOURCES TO VIEW:

Tentative Schedule

This schedule is intended to give the student guidance in what may be covered
during the semester and will be followed as closely as possible. However, the
instructor reserves the right to modify, supplement, and make changes as the course
needs arise.

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic/Lecture/Event</th>
<th>Required/Recommended Readings/Electronic Resources to View</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Orientation</td>
<td>See Required Text</td>
</tr>
<tr>
<td>2</td>
<td>GMAW Set-up</td>
<td>Ch. 11 Pgs. 262-263</td>
</tr>
<tr>
<td></td>
<td>Topic 5 Surfacing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Welds/ Topic 2 Quiz</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Lap Joint (Horizontal &amp; Vertical)</td>
<td>Ch. 11 Pgs.280-281</td>
</tr>
<tr>
<td></td>
<td>Lap Joint (Vertical &amp; Overhead)</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Tee Joint (Horizontal &amp; Vertical)</td>
<td>Ch. 11 Pgs.280-281</td>
</tr>
<tr>
<td></td>
<td>Tee Joint (Vertical &amp; Overhead)</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>1G Plate</td>
<td>Ch. 11 Pg.277</td>
</tr>
<tr>
<td>6</td>
<td>2G Plate</td>
<td>Ch. 11 Pg.277</td>
</tr>
<tr>
<td>7</td>
<td>3G Plate</td>
<td>Ch. 11 Pg.277</td>
</tr>
<tr>
<td>8</td>
<td>4G Plate</td>
<td>Ch. 11 Pg.277</td>
</tr>
<tr>
<td>9</td>
<td>3G Guided Bend Test</td>
<td>Pgs.578-580</td>
</tr>
<tr>
<td></td>
<td>4G Guided Bend Test</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>1G Pipe</td>
<td>Ch. 5</td>
</tr>
<tr>
<td>11</td>
<td>2G Pipe</td>
<td>Ch. 5</td>
</tr>
<tr>
<td>12</td>
<td>5G Pipe</td>
<td>Ch. 5</td>
</tr>
<tr>
<td>13</td>
<td>6G Pipe</td>
<td>Ch. 5</td>
</tr>
<tr>
<td>14</td>
<td>6G Pipe Guided Bend Test</td>
<td>Ch. 5</td>
</tr>
<tr>
<td>15</td>
<td>Workmanship Test</td>
<td>Ch. 5</td>
</tr>
</tbody>
</table>

REQUIRED TEXT AND MATERIAL


# NS-1200B CENTERFIRE NOZZLE, SLIM          2
# T-035 CONTACT TIP .035                  6
# DS - 1 GAS DIFFUSER USED w/ .035-.045    2
# 790 MIG- WELPER Pliers                   1
# 150-96820 WHITE PAINT METAL MARKER       1
#554 Welder’s BACK-HAND PAD                1

These items ( NS- 1200B, T- 035, & DS- 1 ) are for the Bernard 300A, “Q” Gun
Q3010TB8EM
GRADING CRITERIA

<table>
<thead>
<tr>
<th>Test/Quizzes</th>
<th>20%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lab</td>
<td>70%</td>
</tr>
<tr>
<td>Workmanship Test</td>
<td>10%</td>
</tr>
</tbody>
</table>

GRADING SCALE

<table>
<thead>
<tr>
<th>Percentage Range</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>90-100</td>
<td>A</td>
</tr>
<tr>
<td>80-89</td>
<td>B</td>
</tr>
<tr>
<td>70-79</td>
<td>C</td>
</tr>
<tr>
<td>60-69</td>
<td>D</td>
</tr>
<tr>
<td>0-59</td>
<td>F</td>
</tr>
</tbody>
</table>

Grading method for written test or quizzes will be stated on all written tests and quizzes.

Grading criteria for performance tests will be explained prior to beginning the test.

Grading for lab projects will be determined by the number of critical areas of inspection. Each area will be given a point value and scored in this manner.

All standards of acceptability are based on American Welding Society and American Society of Mechanical Engineers Criteria.

**Instructor’s Participation Policy:**

All students are expected to be in attendance during their scheduled periods of instruction (lecture and lab). This begins with the first scheduled class day of the term. The Instructor’s participation and course policy is as follows:

- **Department Policy** is that students shall have no more than 6 Absences per course period. Use them wisely.
- Calling in does not mean you will be counted present or have an excused absence. Excused absences will be determined by the instructor.
- To prevent classroom distractions, the instructor may choose to lock the door after instruction has begun.
- Leaving class early will be considered an absence.
- If you fail to answer when your name is called, you will be counted absent. A sign-in sheet may be used in lieu of roll call. When this is the case, it is your responsibility to sign your name. In either case, if you arrive late, it is your responsibility to inform the instructor. The instructor may take attendance (call roll) at any time during a class period.
- Any missed instruction relating to safety or equipment operation must be completed prior to performing the related lab activities.

Attendance is an essential part of your final grade. It is the student’s responsibility to contact the instructor to make up any lecture or lab time. Any make up work will be at the instructor’s discretion.
DEPARTMENT PARTICIPATION POLICY:

A. Safety rules must be followed at all times.
   • Safety glasses will be worn at all times in lab
   • Face shields are required when grinding
   • Long sleeves and/or leathers will be worn at all times in lab while grinding, cutting, or welding (remove or repair all frayed edges on clothing)
   • Long pants are required at all times in lab (remove or repair all frayed edges)
   • All leather high top boots (preferably steel toed) are required at all times in lab
   • Ear protection must be worn when grinding and arc gouging
   • Use proper lifting techniques when lifting heavy objects (get help if necessary)
   • Horseplay will not be tolerated at any time

Failure to adhere to the safety rules will result in the student being dismissed from class.

B. Classroom disruption
   Disruption will not be tolerated. Student(s) may be asked to leave the class and would require permission of the Dept. Chair to return.

C. Food and drink
   Food and drinks are not allowed in the classroom or lab.

D. Tobacco usage
   Tobacco usage of any kind is NOT allowed in classrooms or lab.

E. Cheating – (Scholastic dishonesty)
   Cheating will not be tolerated. Cheating may result in suspension or expulsion from school.

   All student grievances will be addressed in accordance to the Student Handbook and Student Code of Conduct. The student should be familiar with the policies set forth in the Student Handbook and the Student Code of Conduct

DEPARTMENT PARTICIPATION POLICY:

Unless as part of a class assignment, do not access the internet during lectures and lab time. Internet access is for the sole purpose of educational resources. Attempted access to websites whose primary content is violence, sex, drugs and related issues is strictly prohibited. TSTC campus-wide computers employ network firewalls and are subject to random monitoring by Network Services. Hacking, and unauthorized software installation could result in federal criminal charges and expulsion from TSTC. The Learning Resource Center is available for casual internet use.
MOBILE PHONE USE

In consideration of other students as well as the instructor, mobile phones should be in the vibrate mode, if not turned off completely. Do not embarrass yourself, disrupt the class and annoy your instructor by having a mobile phone ring in the classroom.

PROFANITY

Since this is a public educational institution with people from all walks of life, profanity and other forms of offensive behavior will not be tolerated in the classroom. Students will be warned to stop, if it continues, be asked to leave the class and as a last resort, Campus Security will be asked to intervene.

ACCOMMODATION STATEMENT: "If you have a documented disability which will make it difficult for you to carry out the work as the instructor has outlined, and/or if you need special accommodations due to a disability, please contact (956) 364-4520 or visit Support Services Office located in the Tech Prep Bldg. (P Bldg.) as soon as possible to make appropriate arrangements."

CLASS POLICIES:

Copyright Statement

The materials used in the course (textbooks, handouts, media files (podcast, MP3, Videos, RSS Feeds), and all instructional resources on the colleges Learning Management System (Moodle) are intended for use only by students registered and enrolled in this course, and are only to be used for instructional use, activities associated with, and for the duration of the course. By "handouts," this means all materials generated for this course, which includes but are not limited to syllabi, quizzes, exams, lab problems, in-class materials, review sheets, and any additional materials. These materials may not be retained in another medium or disseminated further. They are provided in compliance with the provisions of the Teach Act. These materials may not be reproduced, displayed, modified or distributed without the express prior written permission of the copyright holder or TSTC. For further information contact your instructor.

Pictures and Videos

Any pictures or videos taken by students in the classroom or the Welding Lab cannot be downloaded into YouTube or any website on the internet without the permission of TSTC.

Communicating with your instructor (MyMail Email System)
The use of Your Mymail TSTC College student e-mail account will be the only way to receive official notices from the college. When communicating with instructors and/or employees of the college you are required to use your TSTC Mymail student e-mail address. If you choose to forward your e-mail to another account, please be advised that all communication from and within the college will use your Mymail student e-mail.

"TSTC Harlingen faculty, staff, and students are asked to report all threats, perceived or real, immediately to College Police located in the Auxiliary Building. If the threat is imminent, the College Police emergency phone line at 364-4234 or 9-911 should be called. College Police will then coordinate the proper response in accordance with State and federal laws and TSTC System/College rules and regulations."

Instructor : Ramiro Villarreal

Office Phone Number : (956) 364-4813

Email Address : Ramiro.villarreal@harlingen.tstc.edu

NOTE: Any changes to this syllabus will be provided in writing to the student and updated on all posted locations (HB 2504, course Moodle sites, building offices, etc.).