

RANGER COLLEGE  
Syllabus  
(FALL 2010)

COURSE NUMBER AND TITLE: WLDG 2451 - Advanced Gas Tungsten Arc (TIG) Welding

CREDIT HOURS: 4 HRS/WK LEC: 2 HRS/WK LAB: 4

LEC/LAB/HRS/WK COMBINATION: 6

Name of Instructor: Tom Peebles  
Welding Building

Office Location: Tom Peebles

Office Hours: 6:30AM-8:00AM

Office Phone: 1-254-647- 5436

College E-mail: [tpeebles@ranger.cc.tx.us](mailto:tpeebles@ranger.cc.tx.us)

**I. CATALOG DESCRIPTION**

Advanced topics in GTAW welding, including welding in various positions and directions.

**II. COURSE GOAL**

The student will exhibit expertise in various welding positions; describe safety rules and equipment used; and describes the effects of welding parameters in GTAW. The student will weld various joint designs; diagnose welding problems and perform visual inspections.

**III. COURSE CONTENT**

1. Keeping equipment clean
2. Keeping workstation clean
3. Cleaning of electrodes
4. Preparing materials to weld
5. Gases (mixture)

**IV. TEXTBOOK (S); READINGS; MATERIALS**

Textbooks are required by the student and can be purchased at the college bookstore.

1. Modern Welding Technology  
Althoes, Turnquist, and Bowditch  
Goodheart-Willcox, Inc.
2. The Pipe Fitter's and Pipe Welder's Handbook

Thomas W. Frankland  
Glencoe Publishing Company, Inc.

3. Welding Print Reading

John R. Walker  
Goodheart-Willcox, Inc.

**V. Methods Of Instruction**

1. Lecture will be used to present the material.
2. Lecture will be supported with demonstrations and handouts to facilitate the learning process.
3. Demonstrations will be given at the beginning of each unit of instruction to include all safety rules and precautions to be observed.

**VI. SCAN COMPETENCIES - Workforce Education Programs/courses**

**Scans (SC)**

- 1.1 Locate, understand, and interpret written instructions to perform task
- 1.2 Interpret blueprints and material catalog
- 1.3 Read Text of Technical Manuals, graphs and schedules
- 2.1 Communicate written thoughts, ideas, information and messages
- 3.1 Perform basic calculations
- 5.1 Participates as members of a team-contributes to group effort
- 5.2 Teaches others new skills
- 7.3 Improves or designs systems-suggest modifications to existing systems and develops new or alternative systems to improve performance
- 8.1 Selects technology chooses procedures, tools, and equipment
- 9.1 Creative thinking-Generates new ideas
- 9.5 Knowing how-to-learn uses efficient learning techniques to acquire and apply new knowledge and skills
- 11.1 Listen and speak well enough to explain schedule and procedures and work in teams

**VII. LEARNER OUTCOMES**

1. Weld stainless steel plate (SC 1.1 – 8.1 – 9.5)
2. Weld stainless steel pipe using roll method (SC 1.1 – 8.1 – 9.5)
3. Weld aluminum plate (SC 1.1 – 8.1 – 9.5)
4. Weld aluminum pipe using roll method (SC 1.1 – 8.1 – 9.5)

5. Weld stainless steel pipe using 5G position (SC 1.1 – 8.1 – 9.5)
6. Weld aluminum pipe using 5G position (SC 1.1 – 8.1 – 9.5)

### **VIII. COURSE CALENDAR**

The schedule is tentative and subject to change depending upon the progress of the class. Daily assignments, as well as tests, include a written component.

The student will be expected to read chapter assignments outside of the classroom. Each student will be expected to complete a welding progress chart. The progress chart will consist of a number of welding projects, which they will be graded on.

Day	Classroom Work	Pages	Lab Work
1	Chapter # 24	706-707	Progress Chart
2		707-710	Progress Chart
3		710-712	Progress Chart
4		712-714	Progress Chart
5		714-716	Progress Chart
6		716-717	Progress Chart
7		717-720	Progress Chart
8		720-724	Progress Chart
9		724-726	Progress Chart
10	Chapter # 18	538-540	Progress Chart
11		540-542	Progress Chart
12		542-546	Progress Chart
13		546-549	Progress Chart
14	Chapter # 14	435-438	Progress Chart
15		438-440	Progress Chart
16		440-444	Progress Chart
17		444-449	Progress Chart
18		449-451	Progress Chart

19	Chapter # 18	549-551	Progress Chart
20		551-553	Progress Chart
21		553-555	Progress Chart
22		555-559	Progress Chart
23	TEST		
24	Classroom Discussion		Progress Chart
25	Classroom Discussion		Progress Chart
26	Classroom Discussion		Progress Chart
27	Classroom Discussion		Progress Chart
28	Classroom Discussion		Progress Chart
29	Classroom Discussion		Progress Chart
30	TEST		

The steps to completing projects are:

1. The student will complete each side of his/her pad two times.
2. The pad is then cut into two parts.
3. The student will then grind and file his/her test pad.

After the student has completed the progress chart he or she will be expected to complete a home project, which will then be averaged into their final grade.

## **IX. COURSE/CLASSROOM POLICIES**

### **1. Attendance/Lateness**

#### **RC Policy on Attendance:**

Regular and punctual attendance in all classes and labs is required of all students. If the student has the equivalence of three weeks of unexcused absences in a course in which he or she is currently enrolled, the student will become ineligible to participate in any extracurricular activities and the instructor may drop the student from the course.

Unexcused absences are counted from the first day of class as listed in the college calendar, regardless of the date of the student's registration.

The only excused absence is an authorized college activity. All work and/or assignments missed because of an excused absence must be completed within two weeks. If the excused absence will be counted as unexcused. An excused absence during the two-week period does not extend the deadline for the completion of assignments.

Class starts at 8:00 AM, you have until 8:05 AM to be in your seat, prepared for class. If you show up to class at 8:06 AM, The door will be locked and you will receive an unexcused absence for the day!

## **2. Class Participation**

Each student is encouraged to participate in classroom discussions and in lab. You are here to learn, and the best way to learn is by hands-on and participation. So let's have fun this semester, learn as much as you can, and have fun. But always remember a safety procedure comes first.

## **3. Missed Exams/Assignments/Make-up Policy**

All assignments and missed exam (s) are to be made-up within two weeks of the assignment or exam. Get with the Instructor to set-up a time to make it up.

## **4. Lab safety/health**

Safety lectures are done everyday, before any equipment is used.

**Safety is the #1 factor in, Tom Peebles Welding Building!!**

## **5. Academic Dishonesty**

Any student caught cheating on any exam, report or project, whether in the classroom, lab, or elsewhere, will earn a grade of **F** for this course.

## **6. Student Behavior Policy**

Everyone will conduct themselves in an adult manner at all times; this is college, not kindergarten! Safety is the #1 factor, and anyone caught in any kind of horseplay will be reprimanded or dismissed for the rest of the class period with an unexcused

absence.

## 7. Available Support Services

Student services, library, tutors, etc...

## 8. ADA Statement:

Ranger College provides a variety of services for students with learning and/or physical disabilities. **The student is responsible** for making the initial contact with the Ranger College Counselor. It is advisable to make this contact **before or immediately** after the semester begins.

## X. ASSESSMENT (Grading Procedure)

The guidelines for grading the project are:

1. How well he or she positioned their test pads. (SC 1.1 – 7.3 – 9.5)
2. How well they maintained slag-free welds (SC 1.1 – 7.3 – 9.5)
3. How well they keep their welds tight and straight (SC 1.1 – 7.3 – 9.5)
4. How well the student uses his or her time to complete a project (SC 1.1)
5. How well the student prepares the test pad for the instructor to grade (SC 1.1)

The grading scale for the project is:

- A - The perfect weld has a straight, tight, and clean weld that has perfect uniformity. When this test pad has been cut, ground, and filed, it will show no evidence of slag or improper penetration.
- B - A good weld has the desirable quality of beads that have been run straight and tight; however, bead patterns are not consistent with each other.
- C - A fair weld shows that the welder needs more practice in keeping his or her welds straight, tight, clean and uniform.
- D - A poor weld is one that lacks all of the above qualities and will not be accepted by the instructor.

The student will be given 4 oral and written tests over their ability to:

1. Take and follow directions.
2. Find required welding data.
3. Set up and shut down oxyacetylene equipment.
4. Set up and demonstrate arc welding.

5. Demonstrate sufficient knowledge of welding electrodes and codes.

The grading scale for the test will be:

A=90-100% accuracy

B=80-99% accuracy

C=70-79% accuracy

D=60-69% accuracy

F=59% and below

The final grade will be determined by the student's attitude, attendance, interest, and performance in the classroom. The grade is given based on the following system of points:

- |                                |           |
|--------------------------------|-----------|
| 1. Progress Chart (completion) | 50 points |
| 2. Progress Chart (grade)      | 20 points |
| 3. Written Test                | 25 points |
| 4. Attitude                    | 5 points  |

The points given for completion of the progress chart are:

25% completion = 10 points

50% completion = 15 points

75% completion = 35 points

100% completion = 50 points

The points given for the grade on the progress chart are:

A = 20 points

B = 15 points

C = 10 points

D = 5 points

The points given for the average of the four tests are:

A = 6 points

B = 5 points

C = 4 points

D = 3 points

F = 2 points

If the student is carrying a grade of 90% or better the instructor will give the final point.

**Bonus:**

A bonus of 10 points, to be averaged with all other grades, will be

offered on the final exam. The nature of the bonus will be determined by the instructor and announced to the student in advance of the final exam.

If you are having any problems or need any extra help please let me know. I am available for extra help at anytime, my number and office hours are on the front of this syllabus; we can get together and set up an appointment.

**XI. NON-DISCRIMINATION STATEMENT**

Admissions, employment, and program policies of Ranger College are nondiscriminatory in regards to race, creed, color, sex, age, disability, and national origin. All recruitment and admissions material complies with Section 504 and the ADA.

**XII. RECEIPT OF SYLLABUS FORM**

**(Required of all students and filed by the instructor)**

**Legibly print** the following information:

**NAME:**\_\_\_\_\_ **DATE:**\_\_\_\_\_

“I have received and understand the information in the syllabus for,  
(WLDG 2451 - Advanced Gas Tungsten Arc (TIG) Welding), and I  
agree to abide by the stated policies.”

**SIGNATURE OF STUDENT:**\_\_\_\_\_

