



Purpose: It is the intention of this Administrative-Master Syllabus to provide a general description of the course, outline the required elements of the course and to lay the foundation for course assessment for the improvement of student learning, as specified by the faculty of Wharton County Junior College, regardless of who teaches the course, the timeframe by which it is instructed, or the instructional method by which the course is delivered. It is not intended to restrict the manner by which an individual faculty member teaches the course but to be an administrative tool to aid in the improvement of instruction.

Course Title - Advanced Pipe Welding
Course Prefix and Number - WLDG2453
Department - Welding Technology
Course Type: (check one)

Division - Continuing

- Academic General Education Course (from ACGM – but not in WCJC Core)
 Academic WCJC Core Course
 WECM course (This course is a Special Topics or Unique Needs Course: Y or N)

Semester Credit Hours # : Lecture hours# : Lab/other hours # 4:3:4

Equated Pay hours for course - 5

Course Catalog Description - Advanced topics involving welding of pipe using the shielded metal arc welding (SMAW) process. Topics include electrode selection, equipment setup, and safe shop practices. Emphasis on weld positions 5G and 6G using various electrodes.

Describe equipment and required pipe preparation and perform 5G and 6G welds using various electrodes.

List Lab/ Other Hours
Lab Hours 4
Clinical Hours
Practicum Hours
Other (list)

Prerequisites/Co requisites - WLDG 1435 or consent of Department Head

Approvals – the contents of this document have been reviewed and are found to be accurate.

Prepared by Roy R. Jones	Signature 	Date 7/14/10
Department Head Roy R. Jones	Signature 	Date 7/14/10
Division Chair David Clayton	Signature 	Date 7/13/10
Vice President of Instruction or Dean of Vocational Instruction Leigh Ann Collins	Signature 	Date 7/14/11



I. Topical Outline – Each offering of this course must include the following topics (be sure to include information regarding lab, practicum, clinical or other non-lecture instruction):

WLDG 2453 is a required course leading to an Associate of Applied Science Degree or Certificate of Technology in Combination Pipe Welding or an Occupational Certificate in Structural Welding or Stick Pipe Welding. Advanced topics involving welding of pipe using the shielded metal arc welding process. Topics include electrode selection, equipment set up, and safe shop practices. Emphasis on the weld positions 5G and 6G using various electrodes. Laboratory fee required. (128 Contact Hours) (5:3-5)

II. Course Learning Outcomes

Course Learning Outcome	Method of Assessment
<p>Upon successful completion of WLDG, the student should be able to:</p> <ol style="list-style-type: none"> 1. Explain shop safety rules, safety rules for tools and equipment, and personal safety rules. *1,2,4,5,6 2. Describe and setup equipment used in the SMAW process. *5,7 3. Properly prepare pipe for welding. *4,5,7 4. Perform 5G and 6G pipe welds using various electrodes. *5 5. Identify common ferrous and non-ferrous metals. *1,2 6. Explain preheating, postheating, and maintaining interpass temperatures. *1,4,5 7. Demonstrate how to write a report using a word processor, saving it to a disk, and printing a final copy. *1,2,3,5,6,7,8 	<p>The student learning activities are designed to lead the student to successful acquisition of the student learning outcomes. The student will:</p> <ol style="list-style-type: none"> 1. Attend demonstrations of how to safely plan laboratory activities before starting work. 2. Attend discussion and demonstration sessions that familiarize students with process background and safety procedures. 3. Prepare pipe coupons according to industry standards for SMAW. 4. Make pipe welds in 5G position. 5. Make pipe welds in 6G position.

III. Required Text(s), Optional Text(s) and/or Materials to be Supplied by Student.

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IV. Suggested Course Maximum - Weekly Lecture Week 1, First day hand out and orientation, 2, Handout, Welding Safety Film, Safety in the Workplace, 3,4 Module 29111-103, SMAW-Open-Root Pipe Welds A. ASME/API Specs., B. Test Specimens, C. Bead Sequence, D. Supports, 5, Exam, Module 29111-103, 6,7 Module 29301-03, Preheating and Postheating of Metals A. Preheating, B. Interpass Temperature, C. Postheating, 8, Exam, Module 29301-03, 9, Handout/Discussion, Word Processor A. Entering Data, B. Printing a Final Copy, C. Saving to a disk, 10,11 Discussion, Testing Procedures, 12-14 Module 29302-03, Physical Characteristics and Mechanical Properties of Metals A. Composition, B. Characteristics, C. Ferrous and Non-ferrous metals, D. Metal Forms and Structures, 15 Review, 16 Final Exam, Module 29302-03. Laboratory: 1. Base metal Preparation, 2-8 5G (roll-out) Pipe, 9-14 6G (horizontal) Pipe, 15 Complete all welds, 16 Final Exam. The maximum number of hours for this class is 160 and the maximum number of students for this is 15.

V. List any specific spatial or physical requirements beyond a typical classroom required to teach the course.

Any student eligible for and requesting academic accommodations due to a disability is required to provide a letter of accommodation from the Special Populations office at the beginning of each semester and no later than the second week of school unless otherwise determined by the Special Populations office.

For further information regarding Disability services contact the Special Populations office located in the Ball Technical building in room B105 phone 281-476-1888.

VI. Course Requirements/Grading System – Describe any course specific requirements such as research papers or reading assignments and the generalized grading format for the course Student learning outcomes will be measured through the critique of weekly laboratory assignments and through periodic examinations. The final course grade will be based on the following:

Departments Assignments	30%
Laboratory Assignments	50%
Final Exam	20%
	100%

100-90 = A

89-80 = B

79-70 = C

69-60 = D

Below 60 = F

I = Incomplete (to be used in case of emergencies or illness)

W = Student Withdrawal (either by student or by instructor)

VII. Curriculum Checklist

- **Academic General Education Course** (from ACGM – but not in WCJC Core)
No additional documentation needed
- **Academic WCJC Core Course**
Attach the Core Curriculum Checklist, including the following:
 - Basic Intellectual Competencies
 - Perspectives
 - Exemplary Educational Objectives
- **WECM Courses**
If needed, revise the Program SCANS Matrix & Competencies Checklist.