



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 – Intermediate Shielded Metal Arc Welding (SMAW)

Course Prefix and Number - WLDG 1457

Department -Welding Technology

Division – Vocational Science

Course Type: (check one)

- 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 - A study of the production of various fillets and groove welds. Preparation of specimens for testing in various positions..

Prerequisites/Co requisites - WLDG 1428 or Division Chair Approval

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

Prepared by	Roy Jones	Date	10-19-11
Reviewed by department head	Roy Jones	Date	10-19-11
Accuracy verified by Division Chair	Terry David Lynch	Date	3/27/2012
Approved by Dean of Vocational Instruction or Vice President of Instruction	Lac	Date	11-9-12



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):

Learn the proper use of electrodes and amperage settings for various thicknesses of materials and welding positions, principals of arc welding, and interpret electrode classifications.

II. Course Learning Outcomes

Course Learning Outcome	Method of Assessment
<ul style="list-style-type: none"> -Identify principles of arc welding -Describe arc welding operations of fillet and groove joints -Explain heat treatments of low alloy steels -Explain weld size and profiles -Prepare test plates -Perform fillet welds in the overhead position -Perform air carbon arc weld removal -Perform bevel groove welds with backing plates in various positions -Demonstrate use of tools and equipment -Explain shop safety rules, safety rules for tools and equipment, and personal safety -Explain importance of a Material Safety Data sheet (MSDS) -Distinguish between qualification and certification procedures -Discuss problems of welding discontinuities -Pass a bend and exray test as required by AWS Procedures and Standards 	<ol style="list-style-type: none"> 1. Attend demonstrations of how to safely plan laboratory activities before starting work. 2. Make oxyacetylene cutting and beveling operations using gas equipment in preparation for arc welding. 3. Apply industry standards toward becoming familiar with certification welds. Understand shrinking and distortion problems that occur with certain metals. 4. Prepare coupons, perform F1 (flat) open V-butt root pass, hot pass, filler and cover pass. Select proper electrode for each procedure. 5. Prepare coupons, perform F2 (horizontal) open butt with 1/8" E6010 electrode root pass, hot pass, 3/32" E7018 electrode fill and cap. 6. Perform F3 (vertical) Tee joint 1/8" E6010 electrode root and hot pass welds uphill. 7. Perform F3 (vertical) open butt welds downhill. Select proper electrode for each pass. 8. Perform F4 (overhead) open V-butt. Prepare specimens and test welds. 9. Demonstrate acquire skill of all lab assignments through a practical final examination

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

Modern Welding Technology by Howard B. Cary, Published by Prentice Hall, 2nd Edition 1989

Supplemental Reading: Welding Skills, by R.T. Miller, Published by American Technical Publishers, Inc., Illinois, 1985.

Welding Principles and Applications, by Larry Jeffus and Harold V. Johnson, Published by Delmar Publishers, Inc., 2nd Edition, 1988.

IV. Suggested Course Maximum - 15

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

None.

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

Department Assignments	30%
Laboratory Assignments	50%
Final Exam	20%
Total	100%
100-90 = A	
89-80 = B	
79-70 = C	
69-60 = D	
Below 60 = F	

I = Incomplete (to be used for emergencies or illness)
W = Student Withdrawal (either by student or 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.