



**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

**Division** – Workforce Dev

**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** – 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.

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

**Prerequisites/Corequisites** - WLDG 1435 or Welding Department Chair Approval

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

Prepared by Roy R. Jones	Signature 	Date 10/2/08
Department Head	Signature	Date
Division Chair	Signature	Date
Vice President DALE PINSON	Signature 	Date 10-14-08



**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):

- Topic 1: Safety and Health of Welders
- Topic 2: Welding with a Consumable Electrode
- Topic 3: Mechanized Cutting
- Topic 4: Power Source for Arc Welding
- Topic 5: Electrode and Filler Metal Selection
- Topic 6: Welding Carbon Steel and Nonferrous Metal
- Topic 7: Cost of Welding and Quality Control
- Topic 8: Welding Specifications and Procedures
- Topic 9: Destructive Testing

**II. Course Learning Outcomes**

<b>Course Learning Outcome</b>	<b>Method of Assessment</b>
<p>Upon successful completion of WLDG2453 the student will be able to:</p> <ol style="list-style-type: none"> <li>1. Correctly run a root pass.</li> <li>2. Run a hot pass using E7018 electrodes in a fixed position.</li> <li>3. Correctly run an end pass maintaining interpass temperatures.</li> <li>4. Place final bead before capping</li> <li>5. Perform a three bead cap.</li> </ol>	<ol style="list-style-type: none"> <li>1. Skills evaluation</li> <li>2. Skills evaluation</li> <li>3. Skills evaluation</li> <li>4. Skills evaluation</li> <li>5. Skills evaluation</li> </ol>

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

Modern Welding Technology, 6th Edition, by Howard Cary and Scott Helzer: Prentice Hall, 2005

**IV. Suggested Course Maximum** – 15 student maximum

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

Standard welding equipment and supplies

**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**

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**  
Attach the following:

- Program SCANS Matrix
- Course SCANS Competencies Checklist



Course Prefix & Number: WLDG 2453	
<b>SCANS COMPETENCIES FOR THIS COURSE</b>	
Competency	Method of Assessment
<b>1 READING:</b> Locate, understand, and interpret written information in prose and in documents such as manuals, graphs, and schedules.	
<b>2 WRITING:</b> Communicate thoughts, ideas, information, and messages in writing, and create documents such as letters, directions, manuals, reports, graphs, and flow charts.	
<b>3 ARITHMETIC OR MATHEMATICS:</b> Perform basic computations and approach practical problems by choosing appropriately from a variety of mathematical techniques.	Computations on written exercise
<b>4 SPEAKING AND LISTENING:</b> Organize ideas and communicate orally; receive, attend to, interpret, and respond to verbal messages and other cues.	
<b>5 THINKING SKILLS:</b> A worker must think creatively, make decisions, solve problems, visualize, know how to learn, and reason effectively.	Skills Examinations
<b>6 PERSON QUALITIES:</b> A worker must display responsibility, self-esteem, sociability, self-management, integrity, and honesty.	
<b>7 WORKPLACE COMPETENCIES:</b> resources ;interpersonal skills; information; systems; and technology	Skills Examinations
<b>8 BASIC USE OF COMPUTERS</b>	.

## SCANS Matrix

Program: Welding Technology CIP: 48.0508									
LIST ALL COURSES REQUIRED AND IDENTIFIED COMPETENCIES									
Competencies								Course Number	Course Title
1	2	3	4	5	6	7	8		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	WLDG 1428	Introduction to Shielded Metal Arc Welding
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	WLDG 1417	Introduction to Layout and Fabrication
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	WLDG 1413	Introduction to Blueprint Reading
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	WLDG 1434	Introduction to Gas Tungsten Arc (TIG) Welding
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	WLDG 1457	Advanced Shielded Metal Arc Welding (SMAW)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	WLDG 1435	Introduction to Pipe Welding
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	WLDG 2380	Cooperative Education
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	WLDG 2453	Advanced Pipe Welding
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	WLDG 2447	Advanced Gas Metal Arc Welding
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	WLDG 2451	Advanced Gas Tungsten Arc Welding
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
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<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
								COMPETENCY REFERENCES	
								<b>8 Basic use of computers</b>	
								<b>7 Workplace Competencies:</b> resources; interpersonal skills; information; systems; and technology.	
								<b>6 Personal Qualities:</b> A worker must display responsibility, self-esteem, sociability, self-management, integrity, and honesty.	
								<b>5 Thinking Skills:</b> A worker must think creatively, make decisions, solve problems, visualize, know how to learn, and reason effectively.	
								<b>4 Speaking and Listening:</b> Organize ideas and communicate orally; receive, attend to, interpret, and respond to verbal messages and other cues.	
								<b>3 Arithmetic or Mathematics:</b> Perform basic computations and approach practical problems by choosing appropriately from a variety of mathematical techniques.	
								<b>2 Writing:</b> Communicate thoughts, ideas, information, and messages in writing, and create documents such as letters, directions, manuals, reports, graphs, and flow charts.	
								<b>1 Reading:</b> Locate, understand, and interpret written information in prose and in documents such as manuals, graphs, and schedules.	