Wharton County Junior College

Administrative - Master Syllabus
COVER SHEET

***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** – 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 – A study of the production of various fillets and groove welds. Preparation of specimens for testing in all test operations.

Prerequisites/Corequisites - WLDG 1434 or welding department chair approval.

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

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

Prepared by Roy Jones	Signature Roy R Jones	Date 10/2/08
Department Head	Signature	Date
Division Chair	Signature	Date
Vice President Dale Pinson 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):

Week 1: Shop Safety
1. Electrodes selection
2. Striking and arc flat

Week 2: F1 Fillet weld A6010 1/8" root pass, cover pass, F2 horizontal prepare 7" long 2X1 plate

Week 4-6: Root pass E6010 electrodes
Hot pass E6060 electrodes
Two passes showing

Week 7-9: F3 vertical E6010 electrodes 1/8"
Root pass, hot pass, and cap uphill

Week 10-12: Overhead E6010 electrodes
Weld root pass and cover pass
Two passes showing

Week 13-16: E7018 repeat the same process

Supplemental reading: Welding Skills, by R.T. Miller; Published by Prentice Hall, 2nd Edition, 1989. Welding Principles and Applications by Larry Jeffus and Harold V. Johnson; Published by Delmar Publishers, Inc., 2nd Edition, 1988.
Trade magazines and journals
Welding design and fabrication magazines
American Welding Society journals
Hobart Institute of Welding Technology Video Library

II. Course Learning Outcomes

Course Learning Outcome	Method of Assessment
Upon completion of WLDG 1457, the student will be able to: • Explain shop safety rules including: safety rules when using tools, equipment, and personal safety rules. *5,7 • Explain the importance of the Material Data Safety Sheet (MSDS). *5,7 • Understand and perform proper joint preparation and fit-up. *5,7 • Describe the effects of preheating and post weld heating *5,7 • Explain cautions used when welding various metals and alloys. *5,7 • Distinguish between qualification and certification procedures. *5 • Discussion of problems of welding discontinues *5 • Perform 1G, 2G, 3G, and 4G welds with mild steel and low alloy electrodes in all positions. *7 • Pass a bend and x-ray test as requred by AWS Procedures and Standards. *5,7 The Welding Technology Program does not guarantee that each student will acquire each of the Student Learning Outcomes as listed above.	The student learning activities are designed to lead the student to the successful acquisition of the student leaning outcomes. The student will be expected to: 1. Obtain score of 70 or above on written examinations. 2. Obtain score of 70 or above on safety tests. 3. Obtain score of 70 or above on skills examinations, including: cutting, grinding and placing in position.

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.

IV. Suggested Course Maximum – The maximum number of students for WLDG 1457 is 15 students.

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
Department Assignments: 30%
Laboratory Assignments: 50%
Final Exam: 20%

100-90 = A
89-80 = B
79-70 = C
69-60 = D
Below 60 = F

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

Wharton County Junior College

SCANS Competencies Checklist

Course Prefix & Number: WLDG 1457	
SCANS COMPETENCIES FOR THIS COURSE	
Competency	Method of Assessment
1 READING: Locate, understand, and interpret written information in prose and in documents such as manuals, graphs, and schedules.	
2 WRITING: Communicate thoughts, ideas, information, and messages in writing, and create documents such as letters, directions, manuals, reports, graphs, and flow charts.	
3 ARITHMETIC OR MATHEMATICS: Perform basic computations and approach practical problems by choosing appropriately from a variety of mathematical techniques.	
4 SPEAKING AND LISTENING: Organize ideas and communicate orally; receive, attend to, interpret, and respond to verbal messages and other cues.	
5 THINKING SKILLS: A worker must think creatively, make decisions, solve problems, visualize, know how to learn, and reason effectively.	Student Performance Test
6 PERSON QUALITIES: A worker must display responsibility, self-esteem, sociability, self-management, integrity, and honesty.	
7 WORKPLACE COMPETENCIES: resources ;interpersonal skills; information; systems; and technology	Student Performance Test
8 BASIC USE OF COMPUTERS	

SCANS Matrix

Program: Welding Technology
CIP: 48.0508

LIST ALL COURSES REQUIRED AND IDENTIFIED COMPETENCIES

Competencies 1	2	3	4	5	6	7	8	Course Number	Course Title
☐	☐	☐	☐	☒	☐	☒	☐	WLDG 1428	Introduction to Shielded Metal Arc Welding
☐	☐	☒	☒	☒	☐	☒	☐	WLDG 1417	Introduction to Layout and Fabrication
☒	☐	☒	☐	☒	☐	☒	☐	WLDG 1413	Introduction to Blueprint Reading
☐	☐	☐	☐	☒	☐	☒	☐	WLDG 1434	Introduction to Gas Tungsten Arc (TIG) Welding
☐	☐	☐	☐	☒	☐	☒	☐	WLDG 1457	Advanced Shielded Metal Arc Welding (SMAW)
☐	☐	☐	☐	☒	☐	☒	☐	WLDG 1435	Introduction to Pipe Welding
☐	☒	☐	☒	☒	☒	☒	☒	WLDG 2380	Cooperative Education
☐	☐	☒	☐	☒	☐	☒	☐	WLDG 2453	Advanced Pipe Welding
☒	☐	☒	☐	☒	☐	☒	☐	WLDG 2447	Advanced Gas Metal Arc Welding
☐	☐	☐	☐	☒	☐	☒	☐	WLDG 2451	Advanced Gas Tungsten Arc Welding
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COMPETENCY REFERENCES

8 **Basic use of computers**

7 **Workplace Competencies**: resources; interpersonal skills; information; systems; and technology.

6 **Personal Qualities**: A worker must display responsibility, self-esteem, sociability, self-management, integrity, and honesty.

5 **Thinking Skills**: A worker must think creatively, make decisions, solve problems, visualize, know how to learn, and reason effectively.

4 **Speaking and Listening**: Organize ideas and communicate orally; receive, attend to, interpret, and respond to verbal messages and other cues.

3 **Arithmetic or Mathematics**: Perform basic computations and approach practical problems by choosing appropriately from a variety of mathematical techniques.

2 **Writing**: Communicate thoughts, ideas, information, and messages in writing, and create documents such as letters, directions, manuals, reports, graphs, and flow charts.

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