UAM College of Technology-Crossett
Welding Technology
Annual Assessment Report 2016

1. **What are the Student Learning Outcomes (SLOs) for your unit? How do you inform the public and other stakeholders (students, potential students, and the community) about your SLOs?**

The following is a list of the Student Learning Outcomes for the Welding Technology program:
Successful completers of the UAM-CTC Welding Technology Program will be able to:

1) Demonstrate proper oxy-fuel cutting process (OFC) and torch adjustments, with emphasis on safety.
2) Demonstrate the ability to produce sound and discontinuity-free welds with the Shielded Metal Arc Welding process (SMAW), in the 1G, 2G, 3G, and 4G positions.
3) Demonstrate the ability to produce quality welds in all positions using the Gas Metal Arc Welding process (GMAW).
4) Demonstrate the ability to produce quality welds in all positions using the Gas Tungsten Arc Welding process (GTAW).
5) Demonstrate the ability to produce sound and discontinuity-free welds on pipe using both the SMAW and GTAW processes in the 2G, 5G, and 6G positions.

Interested individuals can locate information regarding SLOs by the following methods:

- Online at http://www.uamont.edu/pages/uam-college-of-technology-crossett/degree-programs/welding-technology/
- The Welding Technology brochure (Appendix A)
- The UAM-CTC Program Information booklet (Appendix B).
- Individual courses each have specified Student Learning Outcomes. Three examples are provided in Appendix C.

2. **Describe how your unit's Student Learning Outcomes fit into the mission of the university.**

UAM MISSION STATEMENT	WELDING TECHNOLOGY STUDENT LEARNING OUTCOMES
The University of Arkansas at Monticello shares with all universities the commitment to search for truth and understanding through scholastic endeavor.	SLO 1-6: All of the student learning objectives are aimed at preparing students to be successful professionals in welding. The search for truth and understanding are less in a philosophical realm as

UAM MISSION STATEMENT	WELDING TECHNOLOGY STUDENT LEARNING OUTCOMES
	in disciplines such as social sciences or arts and humanities, but rather as the molding of a competent worker who performs his/her skills and abilities in an ethical manner.
The University seeks to enhance and share knowledge, to preserve and promote the intellectual content of society, and to educate people for critical thought.	SLO 2, SLO3, SLO4, and SLO 5: Welding skills involve not only steady hands-on skills but mathematical expertise also. Proper angles and metal fittings require both ability and critical thought processes.
The University provides learning experiences which enable students to synthesize knowledge, communicate effectively, use knowledge and technology with intelligence and responsibility, and act creatively within their own and other cultures.	SLO 1: Emphasis on safety. The students must understand that a safe working environment is paramount in this discipline. Fatalities and injuries have resulted from not understanding or truthfully following safety rules. Improper welds have resulted in structural failures. These failures have resulted in astronomical costs in economic losses, injuries, and fatalities.
The University strives for excellence in all its endeavors. Educational opportunities encompass the liberal arts, basic and applied sciences, selected professions, and vocational/technical preparation. These opportunities are founded in a strong program of general education and are fulfilled through contemporary disciplinary curricula, certification programs, and vocational/technical education or workforce training.	SLO 2, SLO 3, SLO 4, SLO 4, and SLO 5: Without the training in mathematics, MAT 1203 (Technical Mathematics), the students would be unable to perform the required vocational skills. Blueprint Reading is required to enable the students to be competent in recognizing and understanding welding symbols. Welding skills are by nature a vocational/technical skill. The completers will take tests to be become certified. The Welding Technology Program requires that students take general math, communication, and computer courses as outlined in the UAM-CTC program information booklet
The University assures opportunities in higher education for both traditional and non-traditional students and strives to provide an environment	All of the SLOs apply to this metric. Our student population has been very diverse. Completers have ranged in ages from 17 years to 60+ years.

UAM MISSION STATEMENT	WELDING TECHNOLOGY STUDENT LEARNING OUTCOMES
that fosters individual achievement and personal development.	The majority of our learners, but not all, have been male. Also, different races and ethnicities have enrolled and graduated from our program.

3. Provide an analysis of the learning data from your unit. How is this data used as evidence of learning?

Students' performance in the welding program uses the classroom setting to measure student comprehension and learning and is measured in a variety of ways that include the following: exam scores, quizzes, student attendance, and participation in class. Students' performance in shop/lab is measured in steps throughout the semester and ultimately assessed at the end of the semester using actual hands-on performance. Appendix D depicts actual student pre- and post-test welds and demonstrates the progress students typically make from their initial introduction to welding to the end product which is a noticeably improved and completely viable.

The welding instructor has developed a format and step-by-step guideline to each welding process, such as Shielded Metal Arc Welding (SMAW), Gas Tungsten Arc Welding (GTAW), and Gas Metal Arc Welding (GMAW). Each learner must pass a visual inspection before advancing to the next step in the ten-step process. The ten steps are listed below.

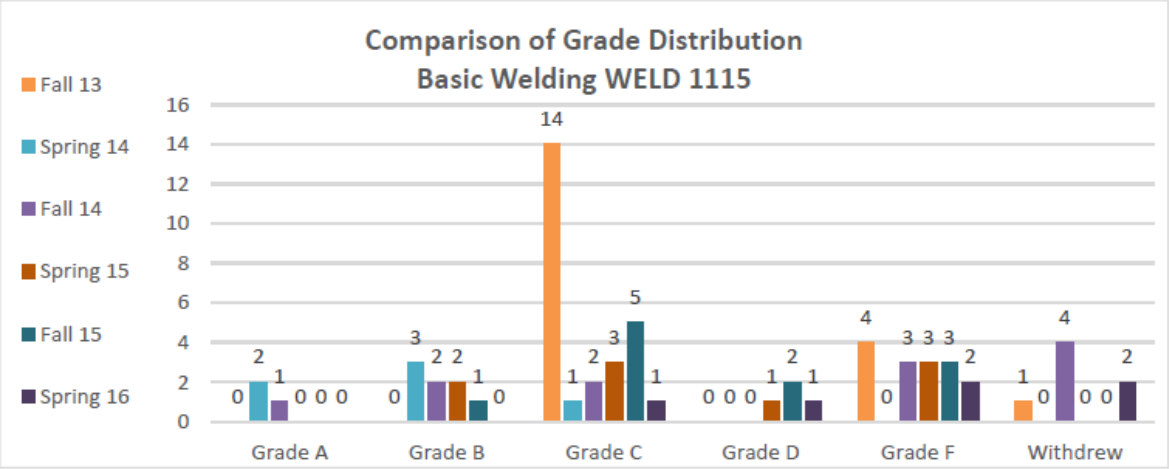
1. Creating padding beads – using both 6010 and 7018 electrodes
2. Welding a T-Joint – using both 6010 and 7018 electrodes
3. Welding a corner joint in the 1G position
4. Welding a corner joint in the 2G position
5. Welding a corner joint in the 3G position
6. Welding a corner joint in the 4G position
7. Performing a V-Groove weld in the 1G position
8. Performing a V-Groove weld in the 2G position
9. Performing a V-Groove weld in the 3G position
10. Performing a V-Groove weld in the 4G position

Each student is given a letter grade based on criteria that has been presented to him/her in lecture, with criteria stated in a rubric (See Appendix F), and through an instructor demonstration. Students do not advance to the next step until their weld in each step is evaluated by the instructor to be satisfactory (graded A, B, C, or D). When all ten steps are successfully completed, that student will have the skills to become a certified welder. For too many years, welding has not been considered to be a highly intellectual/highly technically skilled craft. Nothing could be further from the truth. As a consequence of its difficulty, unfortunately, not all students enrolled can achieve the skill. An analysis of the past six semesters shows the successful completion rate of individual courses greatly varies.

The actual graduation rate for the first welding course (WELD 1115 Basic Welding) through the most difficult (WELD 1513 Pipe Welding) is low (approximately 33%) and will be discussed in subsequent sections of the report.

During classroom and lab instruction, the instructor monitors the class and asks questions. The student responses enable the instructor to assess whether or not the material is being understood and should be presented again or presented differently. The welding assignments require the students to perform certain welding processes. Obviously, if a learner cannot perform those processes correctly, he or she will not be able to complete the welding laboratory exercises.

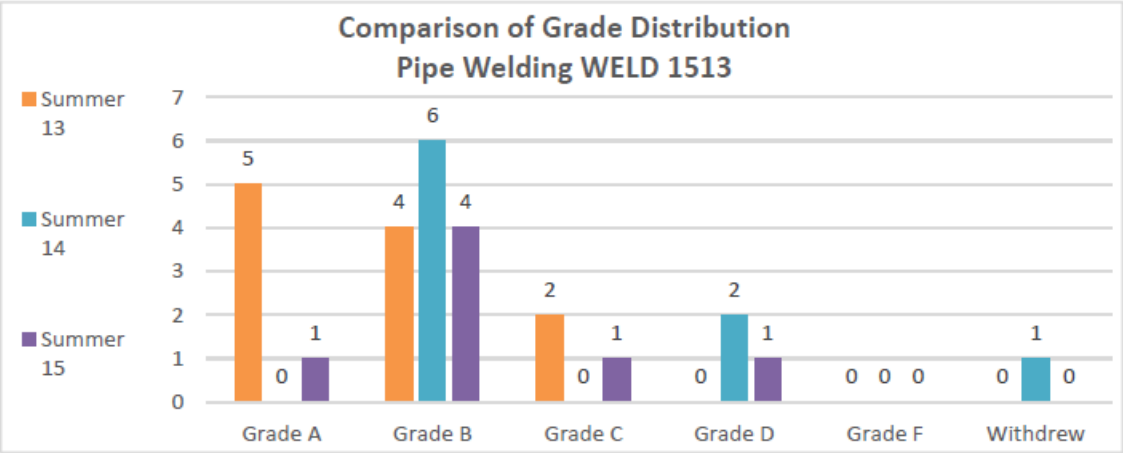
An analysis of the end of course grades yields data that informs the instructor how students are learning in each course. Charts that indicate grades and completions in the first welding class (Basic Welding) and a chart showing the final and most difficult course (Pipe Welding) are provided in Appendix E. The information gathered from such evaluation guides modifications in program offerings which will be further explained in questions 6 and 9. Notes are provided that offer explanation for specific information.



Based on the grade distribution above, the following table shows enrollment and pass rate:

Semester	# Enrolled	Number passed	% passed
Fall 2013	19	14	74%
Spring 2014	6	6	100%
Fall 2014	12	5	42%
Spring 2015	9	6	75%
Fall 2015	11	8	73%
Spring 2016	9	5	56%
		Total students who passed over 6-semester period	67%

WELD 1513 Pipe Welding is the final and most difficult course in the Welding Technology Program. The chart below shows grade distribution for Pipe Welding.



It is obvious that students who successfully complete the prerequisite courses for Pipe Welding are for the most point accomplished welders. A few are not as stellar, but there were no failures for the past three years.

This table indicates enrollment and pass rate for Pipe Welding:

Semester	Number Enrolled	Number passed	Percent passed
Summer 2013	11	11	100%
Summer 2014	9	8 (1 WD)	89%
Summer 2015	7	7	100%
		Total students who passed over 6-semester/3 year period	96%

From Fall 2013 through Fall 2014 total of 46 students began in Basic Welding, and by Summer 2015 sixteen students had completed the entire welding program. Those numbers equate to a 43% completion rate. That rate is lower than the faculty and administration desire; therefore, steps as outlined in questions that follow are being incorporated beginning Fall 2016.

Despite the low completion rate over two full years, the table that follows illustrates the quality of welder coming out of the program. The table shows for the years 2013-2015 students who began the program, graduated, were available to work and actually went to work in the welding field. For program year 2015-2016, only the number who began and completed the program are shown. Follow-up for employment is completed six months after completion/graduation from the program.

Program Year	Students enrolled in the first welding course in the fall semester	Number of Graduates	Number of graduates who were available for employment	Graduates employed in the field at 6-month follow-up	Percentage of graduates employed in welding
2012-2013	17	9	9	8	83%
2013-2014	19	7	6	5	89%
2014-2015	12	6	5	5	100%
2015-2016	11	3	NA	NA	NA

The information provided above and in UAM-CTC Annual Reports, Viability Reports, and Gainful Employment data are indicators of student learning, as completion of the program indicates that students have successfully completed the requirements of the program. Job placement also indicates learning through successful completion of welding courses and labs.

4. Based on your analysis of student learning data in question 3, include an explanation of what seems to be improving student learning and what should be revised.

The staff and faculty believe that student learning is improved by an attendance policy that realistically mirrors that of a workplace. Students are warned at 10% absence, put on probation at 15%, and given a grade of "F" if they reach 20% absence from total course class hours. Such policy has been in place since the opening of the institution in 1975, with one exception. In program year 2009-2010 the faculty voted to abandon the attendance policy. They quickly recognized that students who were tardy and absent were falling behind and failing out. The next program year, faculty voted to bring back the attendance policy in order to enhance student retention.

Appendix F depicts a shop grading rubric that was incorporated in 2012 to concretely inform students each characteristic of a good weld. Having the rubric from the beginning of the course and as a guide during practice in labs has helped students focus on the most important aspects of the welding process. Based on historical evidence of students falling behind in the steps required to move on to higher skilled tasks, a pacing guide has been developed to begin use in Fall 2016. Having intermediate steps that are outlined by date will increase student accountability for project completion. This addition and revision of the method of application is expected to assist students who have difficulty managing their time effectively.

In review of each of the past several semesters, it was noted that in 2014-2015 the welding program had a number of students who withdrew and or failed the Basic Welding, thus did not have the prerequisite needed to take subsequent courses. The cause of withdrawals ranged from a variety of factors such as failing grades, absenteeism, health issues, and employment opportunities. As stated above, employing the use of the pacing guides is one approach we are making to help students succeed in the welding program.

One issue that this program faces is both advantageous and detrimental. It is beneficial to students who are in a position in life where they critically need to go to work full-time within a short period of time in that some students are quickly able to earn certifications in welding positions and immediately go to work making $25 and more per hour. The down side for the program is that many of those in that situation drop out and don't finish all graduation requirements thus leaving the program looking like it is not viable in terms of graduation rates.

Enrollment and completion have fluctuated greatly over the past three years. A chart that indicates completion data is included below. The reasons for non-completion vary from factors such as lack of motivation, lack of academic skills, or lack of mechanical aptitude. The instructor has advocated for a standardized assessment that will inform students if they lack academic skills needed for success in welding so that they can better prepare themselves before beginning this occupational program. There is a misconception by the general populous that it doesn't take a very high level of academic skills to be a welder, but in the 21st century, that is not the case. Students must have solid, almost innate mathematical skills in measurement, geometry, and some trigonometry. Furthermore, reading comprehension not only helps the student get through the classroom and written tests and assignments, but is necessary for the continually changing influence of technology in the industrial field.

However, in preparing this report, an in-depth analysis was done on students who took the beginning course, Basic Welding, for the past six semesters. Information gained from that analysis provides some very interesting data, but is not conclusive that a cut-off score in reading, math, or English would have projected a higher success rates. The conclusion made by the instructor is that pure academic entrance information is not a perfect predictor of success in this trade. A suggestion by an outside consultant has been made to use a different assessment tool that will be described in question 6.

Although the analysis of entrance scores showed that most students testing at higher levels in any of the three subject areas (math, English, or reading) fared better, none of the scores alone was a reliable predictor of success. For instance, out of 66 students who took Basic Welding over the six-semester period, the following table shows the impact of cut-scores:

The following numbers of students who actually did pass the course would not have been admitted into the program with cut scores as indicated below:

ACT Reading 19 or higher	ACT Math 16 or higher	ACT English 16 or higher
27 students (41% of 66)	15 students (23% of 66)	29 (44% of 66)

A conclusion that could be drawn from this data is that of the three academic areas, math skills might be the best predictor of success – but denying entrance to 15 students who ultimately passed Basic Welding based only on their entrance math score does not appear to be a good solution.

5. Other than course level/grades, describe/analyze other data and other sources of data whose results assist your unit to improve student learning.

The students' performance in welding lab is a "hands-on, helmet-down" operation. The instructor performs welds as a demonstration to all students. Then the instructor's visual inspection either confirms or denies students the opportunity to move to the next level. The instructor uses verbal guidance and explains the welding techniques that are standards in the welding industry. Appendix D depicts pictures of "pre" and "post" visual test results of actual student welds. Appendix G shows pictures of a fish cooker that students designed and build in the blueprint reading class. The cooker is an example of a product produced through accomplished student learning.

Successful students who complete Basic Welding and Shielded Metal Arc Welding are given the opportunity to take a welding test using the American Society of Mechanical Engineers (ASME) Section IX Boiler and Pressure Vessel Code. Weld samples are taken and subjected to destructive testing, and if the weld conforms to the applicable code, students will be certified and awarded that certificate. See Appendix H for an example of such criteria.

One "source of data" that is crucial to the success of any program is the evidence of the potential for employment after graduation. At the present time, the UAM-CTC welding instructor has a direct and positive link to Chicago Bridge and Iron (CBI) Crane Company, a union pipe fabrication and welding shop located in El Dorado, Arkansas. All the welders employed with this company are top rated and must pass a rigorous test to become employed. UAM-CTC presently has seven graduates employed with CBI. Seven students applied; all were hired, and the company is pleased with them. Workers receive periodic raises until they reach journeyman status, with a top pay rate in excess of $30 per hour. Another contractor in Crossett (BIC) has also employed UAM-CTC Welding Technology program graduates and has expressed high regard for the quality of welder graduating from the UAM-CTC program.

All students have the opportunity to go to work in the welding field if they do the work in class and lab and want to be a top-rated welder. Welding is a high-demand, high-wage technical field, and those who have the aptitude and desire to be successful have such an opportunity at UAM-CTC.

Other sources of informational data used to improve student learning are drawn from the following:

- Past students have served as guest speakers not only to motivate the new learners, but also to provide a wealth of information in the industrial welding process and environment. Some former students will visit with the instructors either in person or by telephone to provide suggested changes or emphases on items that they are encountering in the real world and feel students in training need more instruction or review.
- The department annually conducts student surveys of program completers. Historically 85-100% of graduates are reachable by phone or in person. Graduates answer survey inquiries and make comments about the program content and ways upon which it can be improved. An example of the survey format follows.

Sample **-- UAM COLLEGE OF TECHNOLOGY-CROSSETT**
COMPLETER/GRADUATE FOLLOW-UP SURVEY

Sample -- UAM COLLEGE OF TECHNOLOGY-CROSSETT
COMPLETER/GRADUATE FOLLOW-UP SURVEY

Student's Name:	Program:
Address:	Exit Date:
City/State/Zip:	Home Phone:
Exit Status: ❑ Graduate Completer ❑ Non-Graduate Completer ❑ Dropped/Withdrew	Alternate Phone(s): _____Work _____Cell
Employment since departure from program Date Hired: Job Title: Employer: Address: City/State/Zip: Telephone: Supervisor: Wage: Terminated:	**Evaluation of Program** ***(Circle completer s response):*** ***#1) The knowledge and skills attained in the training program prepared me for my present job:*** **1 Not at all; 2 somewhat; 3 satisfactorily; 4 very well; 5 extremely well** ***#2) The helpfulness and relevance of the program theory (lecture) were:*** **1 not very helpful; 2 somewhat helpful; 3 helpful; 4 very helpful; 5 extremely helpful** ***#3) The helpfulness and relevance of the program lab sessions were:*** **1 not very helpful; 2 somewhat helpful; 3 helpful; 4 very helpful; 5 extremely helpful** **Recommendations:** ***(Record on the back of this form)***
Check licensure status below (if applicable):	
Graduate completer for programs requiring licensure: ___ Is waiting to take licensure exam ___ Has taken licensure exam ___ Passed licensure exam	
Check one employment statement below, then complete specific information (if required):	
___ Non-Graduate completer is employed in a position related to the field of instruction:	
Graduate completer: ___ Is employed in field of instruction: ___ Full-time ___ Part-time ___ Entered full-time military service ___ Is employed in a position unrelated to the field of instruction. ___ Is seeking employment ___ Is continuing his/her education ___ Refused employment ___ Status is unknown (cannot be located)	
Graduate completer is unavailable for employment: ___ For health reasons ___ Death ___ Other Reason(s): _	

6. As a result of the review of your student learning data in previous questions, explain what efforts your unit will make to improve student learning over the next assessment period. Be specific indicating when, how often, how much, and by whom these improvements will take place.

- In Fall 2016, the welding instructor will begin implementing a Pacing Guide for all full-time welding technology classes. (Appendix I) Staff and faculty foresee that this method of operation may help retain more students and keep them working hard in their lab assignment.
- New scheduling has been incorporated for Fall 2016 to offer Basic Welding in a first 8-week term. This will put more focus on only one set of skills for a more intensive, but shorter period of time. In the past, all courses were taught on a typical 16-week semester schedule, but two courses were

taught simultaneously throughout the entire semester. Having only Basic Welding for eight weeks and then only Shielded Metal Arc Welding for the second eight weeks will strengthen students' skill sets. In the Spring 2017 semester, the same approach will be implemented for Gas Tungsten Arc Welding (GTAW) and Gas Metal Arc Welding (GMAW). Offering the courses in this new arrangement will give students who fail or withdraw from an 8-week session an opportunity to repeat the same course in the second 8-week session. Historically, students would have to wait an entire semester to retake a failed course and thus prolong their completion of the program. It will be interesting to see how great a benefit this approach will make in conjunction with pass rates and program completion rates.

- UAM-CTC has a top-of-the-line destructive bend tester for testing students' welds. This is an assessment tool that leaves no doubt as to the quality of a weld.
- UAM-CTC will purchase seven new arc welders for the Fall 2016 semester to replace old arc welders and a new "trak torch." These additions will offer greater opportunities for student to develop welding skills.
- Welding technology lectures are being enhanced with PowerPoint presentations that are available through publishers.
- An area of improvement the instructor will make is in developing more knowledge and understanding of the diversity of adult learners. Finding a balance of rigor and responsiveness toward students and their needs will be accomplished through self-directed research and reading, through discussions with colleagues and supervisors, and through professional development.

The welding department faculty has asked for the consideration of a standardized entrance exam to be administered to all potential welding entrants. A suggestion from a colleague at UALR is to assess three areas of skills specifically correlated to welding occupations. Such a test is already available to UAM students and is called the ACT® WorkKeys®. The WorkKeys® assessment system permits a direct comparison of the skills and levels of skills needed to perform a job with the skills and levels of those skills an individual currently possesses. The three main assessments are the following: Reading for Information, Locating Information, and Applied Mathematics. An assessment is available for Applied Technology-Mechanics, an aptitude critically important to successful welders. Other curriculum and assessments that relate to employment and work ethic are available and will be mandatory for welding students this fall as a pilot project. If the assessments prove to increase student retention and success, they will become standard in the welding curriculum.

The welding instructor intends to keep the same format and guidelines that he is teaching now -- because it has proven to be effective. In his professional estimation, the reason it works is because students must work with intensity and persistence to successfully complete the steps in the program process and that completion of those steps produce good welders. For example: A recent graduating student was at the top of his class and took a pipe welding test on a 2" heavy wall pipe shortly after he graduated. The employer was a major national contractor called Fluor Daniel. The inspector/recruiter who administered the test called the welding instructor to tell him to "keep up the way you are teaching because it works.

Your student knocked it out of the park, and we are putting him to work."

7. **What new tactics to improve student learning has your unit considered, experimented with, researched, reviewed or put into practice over the past year?**

- Use of PowerPoints in the Blueprint Reading class have been put into action over the past few years. They are helpful in keeping attention focused and making illustrations more specific.
- A crackdown on absenteeism has been implemented and will continue. When students miss classes, it becomes tremendously difficult (if not impossible) to make up the laboratory work.
- Research is continuous seeking to find appropriate pre-assessment tools to better project success for students enrolling in the welding program.

8. **How do you ensure shared responsibility for student learning and assessment among students, faculty and other stakeholders?**

Ensuring shared responsibility is a continuous activity. Each course has its own syllabus that specifically states what activities must be performed and breaks down the grading scale and the percent rating of the laboratory, exam/quiz scores, and final exam. Instructors cover the syllabi content and make clear the expectations at the beginning of each semester for each course. Feedback from the students is solicited to ensure that the students know the rules and content of each class.

Students complete end of semester evaluations of the course, the instructor(s), and the facilities. These evaluations are compiled and sent to administrators and instructors. The Assistant Vice Chancellor who oversees curriculum and development discusses student evaluations with instructors during their annual performance evaluation conference to determine ways to improve instruction, equipment, facilities, etc. Part of the evaluation process includes self-evaluation and peer-evaluation and observations. Having supervisory and peer observations provides opportunities for sharing good strategies and techniques as well as better familiarizing different disciplines and offering ways to fit general studies instruction into technical instruction.

The laboratory assignments and written tests are administered for students to demonstrate their understanding of theory through test scores. Their actual welding ability is made evident through the laboratory work and hands-on projects. The instructor reviews the exams and laboratory results to ensure learners are both being taught and assessed for theory and performance – the proof of combined knowledge, skills, and abilities.

The Welding Technology Program has developed a very positive reputation in the community and particularly among contractors and industry representatives – both of which are evidences of success with stakeholders.

9. **Describe and provide evidence of efforts that your unit is making to recruit/retain/graduate students in your unit/at the University. (A generalized**

statement such as "we take a personal interest in our students" is not evidence.)

- In Fall 2016, the welding instructor will be implementing a Pacing Guide for all full-time welding technology classes. (Appendix I) Staff and faculty foresee that this method of operation may help retain more students and keep them working hard in their lab assignment.

- New scheduling has been designed to offer Basic Welding in an 8-week term. This will put more focus on only one set of skills for a more intensive, but shorter period of time. In the past, all courses were taught on a typical 16-week semester schedule, but two courses were taught simultaneously throughout the entire semester. Having only Basic Welding for eight weeks and then only Shielded Metal Arc Welding for the second eight weeks will strengthen students' skill sets. In the Spring 2017 semester, the same approach will be implemented for Gas Tungsten Arc Welding (GTAW) and Gas Metal Arc Welding (GMAW). Offering the courses in this new arrangement will give students who fail or withdraw from an 8-week session an opportunity to repeat the same course in the second 8-week session. Historically, students would have to wait an entire semester to retake a failed course and thus prolong their completion of the program. It will be interesting to see how great a benefit this approach will make in conjunction with pass rates and program completion rates.

- Efforts for recruitment include job fairs held on-site that are supported by faculty, support staff, and administration.

- In a small town such as Crossett, much of the recruitment is word of mouth and personal inquiries from parents and grandparents who know and respect the welding instructor or who have heard of the success of previous graduates.

- The Career Pathways Initiative helps parents who are working full- or part-time. The program assists eligible students with gasoline purchases, tuition, books, and child care, and provides tutoring help.

- The Welding Technology instructor serves as an academic advisor to the welding students. The duties include: enrolling students in classes, performing degree audits, and making sure that the students apply for their certificates of proficiency, technical certificates, and other associate degrees when applicable.

Student Learning Objectives

Successful completers of the UAM-CTC Welding Technology Program will be able to:

- demonstrate proper oxy-fuel cutting process and torch adjustments with emphasis on safety.
- demonstrate the ability to produce sound and discontinuity-free welds, with the Shielded Metal Arc process in the 1Q 2G, 3G, and 4G positions.
- demonstrate the ability to produce quality welds in all positions using the Gas Metal Arc process.
- demonstrate the ability to produce quality welds in all positions using the Gas Tungsten Arc process.
- demonstrate the ability to produce sound and discontinuity-free welds on pipe using both the Sheilded Metal Arc and Gas Tungsten Arc processes in the 2G, 5G, and 6G positions.

The University of Arkansas at Monticello is committed to providing educational opportunities to all qualified students and employment opportunities to all persons, regardless of their economic or social status, and will not discriminate on the basis of race, color, religion, creed, gender, ethnic or national origin, disability, age or any legally protected class. The Office of Special Student Services has been designated to coordinate efforts to comply with all laws and regulations applicable to qualified individuals with disabilities, as required by Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990. Inquiries concerning the application of all federal laws and regulations regarding discrimination should be directed to the Human Relations Officer, Officer of Finance and Administration, Babin Business Center, (870) 460-1021.

General Information

UAM CTC offers post-secondary training to help individuals gain the knowledge and skills needed to enter and advance in their selected career. In all programs, you will be trained in the skills which employers say you will need in that particular occupational area. The staff works closely with business and industry to keep our programs responsive to the changing workplace. Each of our programs covers both the theory (class work) and the practical (lab work) aspects of the field. And, of course, you will be trained to use the need- ed equipment for the occupation you choose.

An applicant who does not have a high school diploma or equivalency will be given an opportuni- *ty* to work toward earning the Arkansas High School Diploma (GED®).

Because of the high demands of some career areas, our programs frequently have more applicants than openings. Reapplication will be required after one year, and free refresher courses for academic skills are available.

Associate of Applied Science in General Technology

Welding Technology students may choose to continue their studies and earn an Associate of Applied Science in General Technology (MSGT) degree. There are two options for completion of the MSGT degree plan. Details of requirements for the Associate of Applied Science in General Technology degree are found in the Division of General Studies section of the UAM catalog.

Note: *Technical courses required for technical certificate programs may be transferable toward a limited number of associate and baccalaureate degrees. Contact advisor for information regarding transferability.*

Welding Technology

Program Information 2015-2016

"Training for Jobs of Toda9 and Tomorrow"

University of Arkansas at Monticello
College of Technology-Crossett

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Crossett, AR 71635
870-364-6414 or 1-866-323-3384
Fax: 870-364-5707
Web Site: www.uamontedu

Appendix A-1

Welding Technology

The increased demand for certified welders has generated a need to offer in-depth training and lab experiences necessary for the development of combination and advanced welding skills required for certification in multiple areas. The Welding Technology program is designed to meet those objectives. Students will be trained in Shielded Metal Arc Welding (SMAW), Gas Tungsten Arc Welding (GTAW), Gas Metal Arc Welding (GMAW), and Pipe Welding.

The Welding Technology program is designed to provide hands-on training in the lab. Students who successfully accomplish welding skills in accordance with established proficiency standards will be eligible to earn various American Welding Society certifications. Classes are scheduled to accommodate area high school students who would like to attend the program for concurrent credit which awards both high school and college credit. The one-year technical certificate program may be continued to an Associate of Applied Science Degree in General Technology.

Financial Aid

Even though our tuition and fees are very reasonable, we recognize that financial problems sometimes create a barrier to enrollment. We are committed to assisting eligible students to attain financial aid in the fonn of scholarships, grants, or loans through one or more local, state, or federal programs as well as federal and institutional work-study jobs. For complete information on financial assistance, contact our Student Services Director at 870-460-2030 or toll-free 866-323-3384.

Accreditations/Certifications

UAM College of Technology-Crossett (UAM CTC) is accredited by the Higher Learning Commission (a commission of the North Central Association of Colleges and Schools). The college is also recognized as an Eligible Training Provider by the Arkansas Workforce Investment Board and is approved by the Arkansas Department of Career Education and the Veteran's Approving Agency. Additionally, several of our programs are approved by their respective approving agencies.

Welding Technology students who successfully accomplish welding skills in accordance with established proficiency standards will be eligible to earn various American Welding Society certifications.

The Welding Technology program length for a full-time student is two (2) semesters and one (1) summer term.

individuals who desire only a Certificate of Proficeri-cy in welding may complete the 11 credit hours indicated with an asterisk (*) in the suggested schedule that follows:

Graduation Requirements (Suggested Schedule)

Fall Semester		Semester Hours
WELD1103	Blueprint Reading	3
WELD1115	"Basic Welding	*5
WELD1215	*SMAW (Shielded Metal **Arc Welding)**	***5**
WELD1401	**"Welding** Lab **I**	*1
MAT 1203	Technical Mathematics or higher level math course	3
	"Exit: **Welding** Certificate of Proficiency OR Continue to Welding Technical Certificate.	

(NOTE: If student plans to continue, he/she should also *complete WELD 1103 and MAT 1203* as *outlined* above.

Spring Semester		
WELD1315	GrAW (Gas Tungsten Arc Welding)	5
WELD1415	**GMAW(Gas Metal Arc Welding)**	**5**
WELD1501	Welding Lab II	1
COM 1203	Technical Communications or higher level composition course	3
CFA 1103	Computer Fundamentals OR higher level computer course	3

Summer Term I		
WELD1513	**Pipe Welding**	3

Exit: Welding Technology Technical Certificate 37

Program Costs:

Welding Technology Program	
Total Tuition & Fees	$4,000
Books & Supplies (Approximately)	$700

Tests for welding certifications are in addition to the tuition and fees and are based on the type of testbeing taken.

WELDING TECHNOLOGY

Student Learning Outcomes

Successful completers of this program will be able to:

- demonstrate proper oxy-fuel cutting process (OFC), and torch adjustments, with emphasis on safety.
- demonstrate the ability to produce sound and discontinuity-free welds, with the Shielded Metal Arc process (SMAW) in the 1G, 2G, 3G, and 4G positions.
- demonstrate the ability to produce quality welds in all positions using the Gas Metal Arc process (GMAW).
- demonstrate the ability to produce quality welds in all positions using the Gas Tungsten Arc process (GTAW).
- demonstrate the ability to produce sound and discontinu ity-free welds on pipe using both the SMAW and STAW process in the 2G, 5G, and 6G positions.

Program Description:

The increased demand for certified welders has generated a need to offer in-depth training and lab experiences necessary for the development of combination and advanced welding skills required for certification in multiple areas. The Welding Technology program is designed to meet those objectives. Students will be trained in Shielded Metal Arc Welding (SMAW), Gas Tungsten Arc Welding (GTAW), Gas Metal Arc Welding (GMAW), and Pipe Welding.

The Welding Technology program is designed to provide hands-on training in the lab. Students who successfully accomplish welding skills in accordance with established proficiency standards will be eligible to earn various American Welding Society certifications. Classes are scheduled to accommodate area high school students who would like to attend the program for concurrent credit which awards both high school and college credit. The one-year technical certificate program may be continued to an Associate of Applied Science in General Technology degree.

The program length for a full-time student is two (2) semesters and one (1) summer term. Estimated costs for the program are approximately $4,000 for tuition and fees and approximately $700 for books and supplies. *Tests for welding certifications are in addition to the tuition and fees and are based on the type of test being taken.*

Individuals who desire only a Certificate of Proficiency in welding may complete the 11 credit hours indicated with an asterisk (*) in the suggested schedule below.

GRADUATION REQUIREMENTS

(Suggested Schedule)

Name	No.	Fall Semester	Credit Hours
WELD	1103	Blueprint Reading	3
WELD	1115	*Basic Welding	***5**
WELD	1215	*SMAW (Shielded Metal Arc Welding)	***5**
WELD	1401	*Welding Lab I	*1
MAT	1203	Technical Mathematics (or higher-level math course)	3
		***Exit: Welding Certificate of Proficiency OR**	***11**
		continue to Welding Technical Certificate	
		(NOTE: If student plans to continue he/she should also	
		complete WELD 1103 and MAT 1203 as outlined above.)	**17**
		Spring Semester	
WELD	1315	GTAW (Gas Tungsten Arc Welding)	5
WELD	1415	GMAW (Gas Metal Arc Welding)	5
WELD	1501	Welding Lab II	1
COM	1203	Technical Communications (or higher-level composition course)	3
CFA	1103	Tech Computer Fundamentals (or higher-level computer course)	3
		Summer Ⅰ Term	
WELD	1513	Pipe Welding	3
		Exit: Welding Technology Technical Certificate	**37**

UAM COLLEGE OF TECHNOLOGY-CROSSETT WELDING TECHNOLOGY PROGRAM

ELM 1012 Maintenance Welding Course Syllabus
Spring 2016

Instructor:	**Jimmy DuBose, Telephone: 870-460-2006, or toll-free 1-866-323-3384**
Instructor E-Mail:	**dubose@uamont.edu**
Fall Semester:	**January 6 - April 26, 2016**
Class Meets:	**Thursday, 1:00-5:00 p.m.**
Pre-requisite:	**None**
Office Hours:	**7:30 a.m.-8:00 a.m. M-Th**
Course Title:	**ELM 1012 Maintenance Welding, 2 credit hours (1 hr lecture, 3 hrs lab)**
Required Text:	Welding Skills, Fifth Edition, B. J. Moniz, ATS Publishing, ISBN 978-0-8269-3084-2

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Course Description: This course will provide the student with the basic knowledge and skills needed to do simple welding projects that may be required of maintenance workers in an industrial setting. The course will provide an introduction to welding and cutting processes whereby students will become familiar with standard welding terminology, safety procedures, equipment and set-up, and welding rod classifications. The skill focus of the course will be on the basic oxyacetylene cutting process and shielded metal arc welding. Practical application will be provided in the welding lab with an emphasis on safety.

Student Learning Outcomes: After successfully completing this course, an individual should be able to:

1. Set up oxyacetylene cutting equipment
2. Bum (cut) material using a torch
3. Demonstrate the following welding processes using E6010 and E 7018 electrodes
   A. Padding beads - 1G position
   B. T Joint – 2F position; 6 beads on both sides of joint
   C. Welding beads uphill in the 3G position, either on a T-joint or comer joint D. Welding beads overhead 4G position
   E. Weld a root pass with B6010 electrodes followed by fill passes using B7018 electrodes in all positions, on a comer joint
   F. Weld a root pass with B6010 electrodes followed by B7018 electrodes using .500 inch Qlate, beveled 37 degrees

Grading Practices and Procedures: Tests taken from Welding Skills, chapters 3, 8, and 9 and related homework will account for 40% of the overall grade. Progress in welding skills and participation in shop projects will account for 60% of the overall grade. Students will not pass on written exams and tests alone.

Grading Scale: (Based on overall percentage)

100-90	A
89-80	B
79-70	C
69-60	D
59-0	F

Activity	Assignment	Estimated Hours for the Average Student *per Semester*
Academic Engagement	Listening to Lecture/Review Questions/Homework	12
	3 Written Exams	3
	TOTAL ACADEMIC	**15 hours**

Activity	Assignment	Estimated Hours for the Average Student *per Semester*
Shop	Practice welding in all positions Complete	45
	TOTAL SHOP:	**45 hours**
	TOTAL HOURS (Clock/Credit per Financial	**60 hours**
Preparation (Outside of Class)	Read Chapters and Review Questions @ least 1 hour per	15
	Homework, assignments, projects @ least 1 hour per week	15
	TOTAL OUTSIDE OF CLASS	**30 hours**
	GRAND TOTAL HOURS OF ACADEMIC	**90 hours**

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Shop Rules and Tool List – See attached forms to be signed and dated by the student.

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http://www.uamont.edu/pages/student-affairs/ubit

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- Educate you about the UBIT and how it works;
- Provide you with information and tips about how to deal with incidents you may encounter;
- Provide additional resources on our campus and in our community;
- Provide a link for the confidential reporting of concerns

Please be aware that threats. bullying angry outbursts. and other signs of emotional distress are taken seriously and must be reported to the campus UBIT personnel. Reports can be made anonymously by students, faculty, and staff.

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1. Cheating: Students shall not give, receive, offer, or solicit information on examinations, quizzes, etc. This includes but is not limited to the following classes of dishonesty:
    a. Copying from another student's paper;
    b. Use during the examination of prepared materials, notes, or texts other than those specifically permitted by the instructor;
    c. Collaboration with another student during the examination;
    d. Buying, selling, stealing, soliciting, or transmitting an examination or any material purported to be the unreleased contents of coming examinations or the use of any such material;
    e. Substituting for another person during an examination or allowing such substitutions for oneself.
2. Collusion: Collusion is defined as obtaining from another party, without specific approval in advance by the instructor, assistance in the production of work offered for credit to the extent that the work reflects the ideas of the party consulted rather than those of the person whose name in on the work submitted.
3. Duplicity: Duplicity is defined as offering for credit identical or substantially unchanged work in two or more courses, without specific advanced approval of the instructors involved.
4. Plagiarism: Plagiarism is defined as adopting and reproducing as one's own, to appropriate to one's use, and to incorporate in one's own work without acknowledgement the ideas or passages from the writings or works of others.

Spring 2016 Academic Calendar

Spring 2016 includes the following sessions

SESSION	FIRST CLASS DAY	LAST CLASS DAY	LAST DAY TO DROP WITH A "W"
Full Term (1)	January 6	April 26	March 16
First 8-week (8W1)	January 6	February 29	February 11
Second 8-week (8W2)	March 1	April 26	April 12
Six week (6W1)	January 11	February 19	February 5
Crossett 1(Cl)	January 7	March 4	February 16
Crossett 2 (C2)	January 11	April 1	March 2
McGehee 1(Ml)	February 29	March 11	March 10

January 4 (Mon) - New student orientation. Schedule changes

January 5 (Tues) - Open registration.

January 6 (Wed) – Admission application deadline. First day of sessions 1and 8Wl classes.

January 7 (Thurs) – First day of session Cl classes.

January 8 (Fri) – Last day to register or add classes. Tuition and fees due.
January 11 (Mon) – First day of session 6W1 and C2 classes.
January 18 (Mon) – Martin Luther King Holiday. Offices and classes closed.
February 5 (Fri) – Last day to drop a session 6W1 class. Grade will be W.
February 11 (Thurs) – Last day to drop a session 8W1 class. Grade will be W.
February 16 (Tues) – Last day to drop a session C1 class. Grade will be W.
February 19 (Fri) – Last day of session 6W1 classes. Deadline to apply for August and December graduation.
February 29 (Mon) – Last day of sessions 8W1. First day of session M1 classes.
March 1 (Tues) – First day of session 8W2 classes.
March 2 (Wed) – Last day to drop a session C2 class. Grade will be W.
March 4 (Fri) – Last day of session C1 classes.
March 10 (Thurs) – Last day to drop a session M1 class. Grade will be W.
March 11 (Fri) – Last day of session M1 classes.
March 16 (Wed) – Last day to drop a session 1 class or withdraw from the term (not applicable to other sessions). Grade(s) will be W.
March 21-25 (Mon-Fri) – Spring Break.
April 1 (Fri) – Last day of session C2 classes.
April 4 (Mon) - Preregistration for Summer and Fall begins.
April 12 (Tues) - Last day to drop a session 8W2 class. Grade will be W.
April 15 (Fri) – Preregistration for Summer and Fall ends.
April 26 (Tues) – Last day of sessions 1 and 8W2 classes.
April 27- May 3 (Wed-Tues) – Final Exams.
May 6 (Fri) - Commencement.

APPENDIX C

UAM COLLEGE OF TECHNOLOGY-CROSSETT
WELDING TECHNOLOGY PROGRAM
WELD 1215 Shielded Metal Arc Welding (SMAW)
Course Syllabus
Spring 2016

Instructor:	Jimmy DuBose, Telephone: 870-460-2006, or toll-free 1-866-323-3384
Instructor E-Mail:	dubose@uamont.edu
Fall Semester:	January 6 through April 26, 2016
Class Meets:	Tuesday & Thursday -8:00 a.m. -1:00p.m.
Co-requisite:	WELD 1115 or permission of instructor and administration
Office Hours:	7:30 a.m.-8:00 a.m. M-Th
Course Title:	WELD 1215 Shielded Metal Arc Welding, 5 credit hours (2 hrs lecture, 9 hrs lab)
Required Text:	NCCER Contren Learning Series Trainee Guide. Level One, 4th Edition, Prentice Hall. ISBN: 9780136099673

Course Description: Arc Welding is designed to give students knowledge of equipment, safety precautions and shop practice. Students will make basic types of welds in most positions and study welding nomenclature, design of joints, and electric classifications.

Course/Student Learning Outcomes: After successfully completing this course, an individual should be able to:

I. Module 29101-09 - Welding Safety
   a. Identify some common hazards in welding
   b. Explain and identifyproper personal protection

II. Module 29102-09 – Oxy-Fuel Cutting
   a. Identify and explain the use of oxy-fuel cutting equipment
   b. Set up oxy-fuel equipment
   c. Light and adjust torch
   d. Change cylinders
   e. Perform oxy-fuel cutting

III. Module 29103-09 -Plasma Arc Cutting
   a. Explain the plasma arc cutting processes
   b. Prepare and set up plasma arc equipment

IV. Module 29104-09 – Air Carbon Arc Cutting and Gouging
   a. Identify and explain the air carbon arc cutting (CAC-A) process and equi:Qment.

V. Module 269105-09 – Base Metal Preparation
   a. Clean base metal for welding or cutting
   b. Identify and explain joint design

VI. Module 29106-09 – Weld Quality
   a. Identify and explain codes governing welding

APPENDIX C

b. Identify and explain weld imperfections and their causes

VII. Module 29107-09 – SMAW – Equipment and Setup
a. Identify and explain shielded metal arc welding (SMAW) safety
b. Explain welding electrical current
c. Set up a machine for welding

VIII. Module 29108-09 - Shielded Metal Arc Electrodes
a. Identify different types of filler metals
b. Identify and select the proper electrode for a specified welding task

IX. Module 29109-09 - SMAW – Beads and Fillet Welds
a. Set up (SMAW) equipment
b. Describe methods of striking an arc
c. Make stringer, weave and overlapping beads
d. Make fillet welds in the following positions:
1. Horizontal (2F)
2. Vertical (3F)
3. Overhead (4F)

X. Module 29110-09 – Joint Fit-up and Alignment
a. Check for joint misalignment and poor fit-up before and after welding
b. Identify and explain distortion and how it is controlled

XI. Module 29111-09 – SMAW – Groove Welds with Backing
a. Identify and explain groove welds
b. Identify and explain groove welds with backing
c. Perform (SMAW) for v-groove welds with backing in the following positions:
1. Flat -(1G)
2. Horizontal – (2G)
3. Vertical – (3G)
4. Overhead – (4G)

XII. Module 29112-09 – SMAW – Open V-Groove Welds
a. Prepare (SMAW) equipment for open-root v-groove welds
b. Perform open-root v-groove welds in the following positions:
1. Flat – (1G)
2. Horizontal – (2G)
3. Vertical – (3G)
4. Overhead – (4G)

NOTE: The order of the modules is at the discretion of the instructor.

1.
   a. V-groove – 1G – 6010 root pass and 7018s fill and cap on 3/8" plate
   b. V-groove – 2G – 6010 root pass and 7018s fill and cap on 3/8" plate
   c. V-groove – 3G – 6010 root pass and 7018s fill and cap on 3/8" plate
   d. V-groove -4G – 6010 root pass and 7018s fill and cap on 3/8" plate
2. Exhibit safe work practices in lab
3. Optional: Certify in all positions (SMAW) structural steel, either to AWS Dl.1 Welding Code and/or ASME Welding Code Section IX

Grading Practices and Procedures: Tests and related homework will account for 40% of the overall grade. Progress in welding skills and participation in shop projects will account for 60% of the overall grade. Students will not pass on written exams and tests alone.

Grading Scale: (Based on overall percentage)

100-90 A
89-80 B
79-70 C
69-60 D
59-0 F

Activity	Assignment	Estimated Hours for the Average Student *per Semester*
Academic Engagement	Listening to Lecture/Review Questions/Homework	25
	1 Final Exam	5
	TOTAL ACADEMIC	**30 hours**
Shop	Practice welding in	130
	Certification tests (all	5
	TOTAL SHOP:	**135 hours**
	TOTAL HOURS (Clock/Credit per Financial	**165 hours**
Preparation (Outside of Class)	Read Chapters and Review Questions @ least 2 hour per	30
	Homework, assignments, projects @ least 2 hour per week	30
	TOTAL OUTSIDE OF CLASS	**60 hours**
	GRAND TOTAL HOURS OF ACADEMIC INVESTMENT	**225 hours**

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February 5 (Fri) – Last day to drop a session 6WI class. Grade will be W.
February 11(Thurs) – Last day to drop a session 8WI class. Grade will be W.
February 16(Tues) – Last day to drop a session CI class. Grade will be W.
February 19(Fri) – Last day of session 6WI classes. Deadline to apply for August and December graduation.
February 29 (Mon) – Last day of sessions 8WI. First day of session MI classes.
March 1(Tues) – First day of session 8W2 classes.
March 2 (Wed) – Last day to drop a session C2 class. Grade will be W.
March 4 (Fri) – Last day of session CI classes.
March 10(Thurs) – Last day to drop a session MIclass. Grade will be W.
March 11(Fri) – Last day of session MI classes.
March 16 (Wed) – Last day to drop a session 1class or withdraw from the term (not applicable to other sessions). Grade(s) will be W.
March 21-25 (Mon-Fri) – Spring Break.
April 1(Fri) – Last day of session C2 classes.
April 4 (Mon) - Preregistration for Summer and Fall begins.
April 12(Tues) - Last day to drop a session 8W2 class. Grade will be W.
April 15(Fri) - Preregistration for Summer and Fall ends.
April 26 (Tues) – Last day of sessions 1and 8W2 classes.
April 27- May 3 (Wed-Tues) – Final Exams.
May 6 (Fri) - Commencement.

UAM COLLEGE OF TECHNOLOGY-CROSSETT
WELDING TECHNOLOGY
WELD 1513 Pipe Welding
Course Syllabus
Summer I 2016

Instructor: Jimmy DuBose, Telephone: 870-460-2006 or toll-free 1-866-323-3384, Fax 870-364-5707

Class meets: Monday-Thursday 8a.m.–3p.m.

Prerequisites: WELD 1215, WELD 1315 and WELD 1415 or AWS Certification earned in each prerequisite course.

Office Hours: By appointment

Required Text: Welding Level 3, Fourth Edition (2010). NCCER, Prentice Hall, ISBN: 0978-0132135115

Course Description: This course provides development of skills used in the welding of pipe and its various uses in industry.

Student Learning Outcomes: URon completion of this course the student must be able to:

1. Employ safety procedures in preparation of and welding of pipe.
2. A. Pass a visual inspection the root pass in the 2G fixed position using the GTAW process followed by a hot pass with the same process. Following this, the pipe will be welded to completion using the SMAW process and E-7018 electrodes. Root pass must show complete penetration of the entire circumference of the weld with minimal amount of weld discontinuities, such as internal undercut and excessive burn through. Weld face shall have evenly spaced beads that are uniform in height with minimal amount of discontinuities, such as undercut, underfill, porosity, etc.

   B. Pass a visual inspection of the root pass in the 2G fixed position using the SMAW process with E-6010 electrodes. Following this, the pipe will be welded to completion with the SMAW process using E-7018 electrodes. Root pass must show complete penetration of the entire circumference of the weld with minimal amount of weld discontinuities, such as internal undercut and excessive burn through. Weld face shall have evenly spaced beads that are uniform in height with minimal amount of discontinuities, such as undercut, underfill, porosity, etc.
3. A. Pass a visual inspection the root pass in the 5G fixed position using the GTAW process followed by a hot pass with the same process. Following this, the pipe will be welded to completion using the SMAW process and E-7018 electrodes. Root pass must show complete penetration of the entire circumference of the weld with minimal amount of weld discontinuities, such as internal undercut and excessive burn through. Weld face shall have evenly spaced beads that are uniform in height with minimal amount of discontinuities, such as undercut, underfill, porosity, etc.

   B. Pass a visual inspection of the root pass in the 5G fixed position using the SMAW process with E-601O electrodes. Following this, the pipe will be welded to completion with the SMAW process using E-7018 electrodes. Root pass must show complete penetration of the entire circumference of the weld with minimal amount of weld discontinuities, such as internal undercut and excessive burn through. Weld face shall have evenly spaced beads that are uniform in height with minimal amount of discontinuities, such as undercut, underfill, porosity,

APPENDIX C

etc.

4. A. Pass a visual inspection the root pass in the 6G fixed position using the GTAW process followed by a hot pass with the same process. Following this, the pipe will be welded to completion using the SMAW process and E-7018 electrodes. Root pass must show complete penetration of the entire circumference of the weld with minimal amount of weld discontinuities, such as internal undercut and excessive burn through. Weld face shall have evenly spaced beads that are uniform in height with minimal amount of discontinuities, such as undercut, underfill, porosity, etc.

   B. Pass a visual inspection of the root pass in the 6G fixed position using the SMAW process with E-6010 electrodes. Following this, the pipe will be welded to completion with the SMAW process using E-7018 electrodes. Root pass must show complete penetration of the entire circumference of the weld with minimal amount of weld discontinuities, such as internal undercut and excessive burn through. Weld face shall have evenly spaced beads that are uniform in height with minimal amount of discontinuities, such as undercut, underfill, porosity, etc.

5. If the above tests are acceptable, students who qualify will be given a weld test on 2-inch pipe or 6-inch pipe, if they so choose.

Grading Practices and Procedures: Tests and related homework will account for 40% of the overall grade. Progress in welding skills and participation in shop projects will account for 60% of the overall grade. Students will not pass on written exams and tests alone.

Grading Scale: (Based on overall percentage)

100-90	A
89-80	B
79-70	C
69-60	D
59- 0	F

Absentee Polley: Regular and prompt attendance is expected of all students enrolled at UAM-CTC and is necessary to maintain satisfactory progress. Attendance will be recorded for each student by course. A student will be placed on attendance probation once he/she has been absent 15% of the total scheduled hours of a course.

When the student is absent 20% of the total scheduled hours of a course, the student will be officially notified in writing and dropped from the course. A letter grade of "F" will be recorded for the course unless official withdrawal by the student has been accomplished. The student will be notified of attendance probation in writing provided he/she has returned to school before reaching 20% absences . A student terminated for poor attendance may be considered for re-enrollment in the course at its next offering with the consultation and approval of the instructor and school administration.

A student cannot use make-up time to reduce hours of absence any time during the school year. Each time a student is late for class or leaves early, the student will be charged a full hour or hours of absence (rounded up to the larger hour of time).

In a case of extreme emergency, a student may request a leave of absence. A leave of absence must be requested in writing and may be granted or denied by the Director of Student Services. Written documentation supporting the request for a leave of absence must be provided prior to the granting of the

leave or the first day back in class after the leave. The leave of absence must be for no less than seven (7) calendar days and for no more than 21 calendar days during afall or spring semester or 1O calendar days during a summer term. If a student's absences reach 20% of the total class hours and the student has not been approved for a leave of absence, the student will be dropped. No more than one such leave of absence can be granted in a twelve-month period.

Upon receipt of proper documentation, absences caused by court subpoena, jury duty, military orders, or other government ordered visit(s) will be recorded but not included in the total cumulative hours of absence per course. The documentation must be submitted on the first day the student returns to school. Also, absences because of a natural disaster (as determined by the administration) will not be counted in the hours of absence.

Agencies granting financial assistance will be notified as required of all absences of those students receiving financial aid. The policy of each agency regarding payment when a student is absent will apply in each case.

Course Content:

Safety in pipe welding
Visual acceptance criteria for pipe welds in all codes
Machine beveling pipe coupons
SMAW - open root pipe welds
GTAW - carbon steel pipe

Activity	Assignment	Estimated Hours for the Average Student *per Summer Term*
Academic Engagement	Listening to Lecture/Review Questions/Homework	13
	2 Written Exams /@ 1 hour each	2
	TOTAL ACADEMIC ENGAGEMENT:	**15 hours**
Shop	Practice welding in all positions Complete projects	**86-90**
	Certification test (Optional) 1 test@	+/- 4
	TOTAL SHOP:	**90 hours**
	TOTAL HOURS (Clock/Credit per Financial Aid)	**105 hours**
Preparation (Outside of Class)	Read Chapters and Review Questions @ least	30
	TOTAL OUTSIDE OF CLASS PREPARATION:	**30 hours**
	GRAND TOTAL HOURS OF ACADEMIC INVESTMENT PER	**135 hours**

Technical Support Information: Blackboard Assistance:

Contact Office of Instructional Technology; phone 870-460-1663; open Monday-Friday, 8 a.m. - 4:30 p.m.
Online Help Desk: http://www .uamont.edu/pages/resources/academ ic-computing/

Email Assistance:
Contact the Office of Information Technology; phone 870-460-1036; open Monday-Friday, 8 a.m. – 4:30 p.m.

Library Services UAM: The computer section in the Monticello Library is open during regular Library hours. Go to the Taylor Library website for hours of operation: http://www .uamont.edu/pages/library/

Library Services UAM-CTC: The UAM-CTC Library has a limited number of computers and is open (at a minimum) each morning and 1-2 late afternoons. Library hours are posted each semester.

Computer Lab: The UAM-CTC Career Pathways Initiative (CPI) Computer Lab (Room 105 in Main Building) is open from 8:00 a.m. until 8:30 p.m. Monday through Thursday and by appointment on Fridays.

Academic Alert:
The Academic Alert System is a retention program that puts students in contact with the appropriate campus resources to assist them in meeting their educational goals at UAM. If you are doing poorly in your academic work, are chronically absent from class, are exhibiting disruptive behavior or are having difficulty adjusting to campus life, University faculty, staff or a fellow student may report you to the Office of Academic Affairs through the Academic Alert system.

Tutoring:
Tutoring on the UAM-CTC campus will be arranged based on need as identified by faculty and students. Check with your instructor and on bulletin boards for information regarding tutoring sessions.

University Behavior Intervention Team CUBIT) Concern Reporting:

http://www.uamont.edu/pages/student-affairs/ub it/

The University of Arkansas at Monticello cares about the needs of our university family, not only academic needs, but also emotional and physical. In an effort to identify those needing help, UAM has created a network of campus professionals that are committed to a caring, confidential program of identification, intervention and response in order to provide our campus with the greatest chance of success and with the greatest level of protection. The link above was created to accomplish the following:

- Educate you about the UBIT and how it works;
- Provide you with information and tips about how to deal with incidents you may encounter;
- Provide additional resources on our campus and in our community;
- Provide a link for the confidential reporting of concerns

Please be aware that threats, bullying, angry outbursts, and other signs of emotional distress are taken seriously and must be reported to the campus UBIT personnel. Reports can be made anonymously by students, faculty, and staff.

Instructor Feedback Schedule:
Most often, a student can expect a response to email within 24 hours Monday through Thursday. No emails will be answered after 5 p.m. on Thursday until the following Monday.

Student Conduct Statement:

Students at the University of Arkansas at Monticello are expected to conduct themselves appropriately, keeping in mind that they are subject to the laws of the community and standards of society. The student

must not conduct him/herself in a manner that disrupts the academic community or breaches the freedom of other students to progress academically.

Academic Dishonesty:

1. Cheating: Students shall not give, receive, offer, or solicit information on examinations, quizzes, etc. This includes but is not limited to the following classes of dishonesty:
    a. Copying from another student's paper;
    b. Use during the examination of prepared materials, notes, or texts other than those specifically permitted by the instructor;
    c. Collaboration with another student during the examination;
    d. Buying, selling, stealing, soliciting, or transmitting an examination or any material purported to be the unreleased contents of coming examinations or the use of any such material;
    e. Substituting for another person during an examination or allowing such substitutions for oneself.
2. Collusion: Collusion is defined as obtaining from another party, without specific approval in advance by the instructor, assistance in the production of work offered for credit to the extent that the work reflects the ideas of the party consulted rather than those of the person whose name in on the work submitted.
3. . Duplicity: Duplicity is defined as offering for credit identical or substantially unchanged work in two or more courses, without specific advanced approval of the instructors involved.
4. Plagiarism: Plagiarism is defined as adopting and reproducing as one's own, to appropriate to one's use, and to incorporate in one's own work without acknowledgement the ideas or passages from the writings or works of others.

Students with Disabilities: It is the policy of the UAM College of Technology - Crossett to accommodate individuals with disabilities pursuant to federal law and the University's commitment to equal educational opportunities. It is the responsibility of the student to inform the instructor of any necessary accommodations at the beginning of the course. Any student requiring accommodations should contact Special Student Services at 870-364-6414 or fax 870-364-5707 on the Crossett campus.

Important Dates for Summer I 2016 (Classes meet MTWH)

May 20 (Fri) - Tuition and fees due for preregistered students for sessions 1 and S1.

Self-registration for S1 classes.

May 23 (Mon) -Application deadline for regular registration. Registration for sessions

S1 classes. First day of sessions S1 classes.

May 24 (Tues) – Last day to register or add sessions S1 classes.

May 30 (Mon) - Memorial Day Holiday. Offices and classes closed.

June 16 (Thurs) - Last day to drop session S1 classes. Grade(s) will be W.

June 22 (Wed) - Last day of session S1 classes. Final exams in S1 classes.

June 23 (Thurs) - Commencement for College of Technology-Crossett.

June 28-29 (Tues -Wed) - Self registration for Summer II.

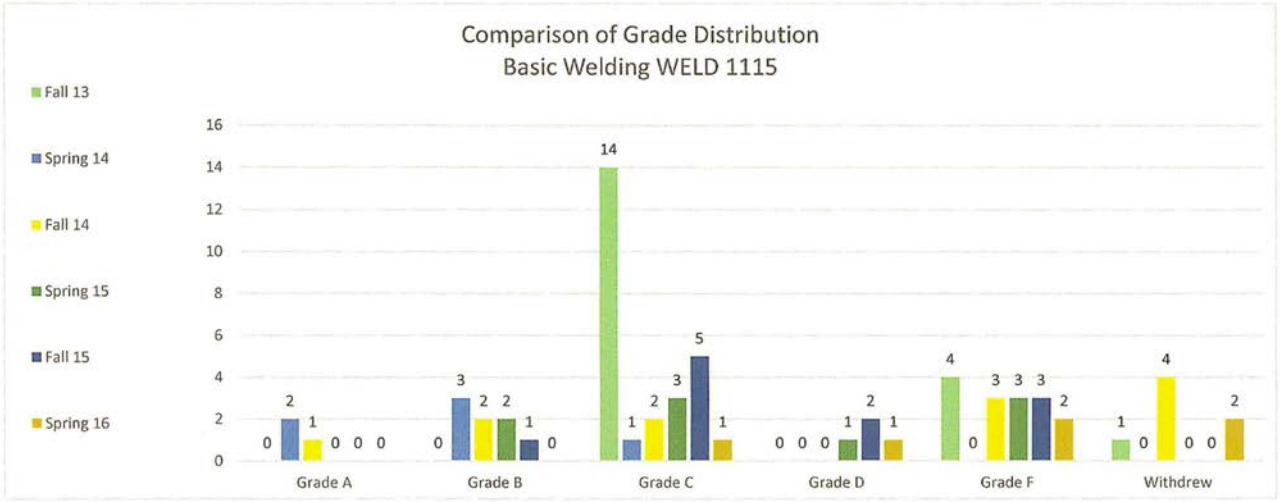
Pre-test Weld:

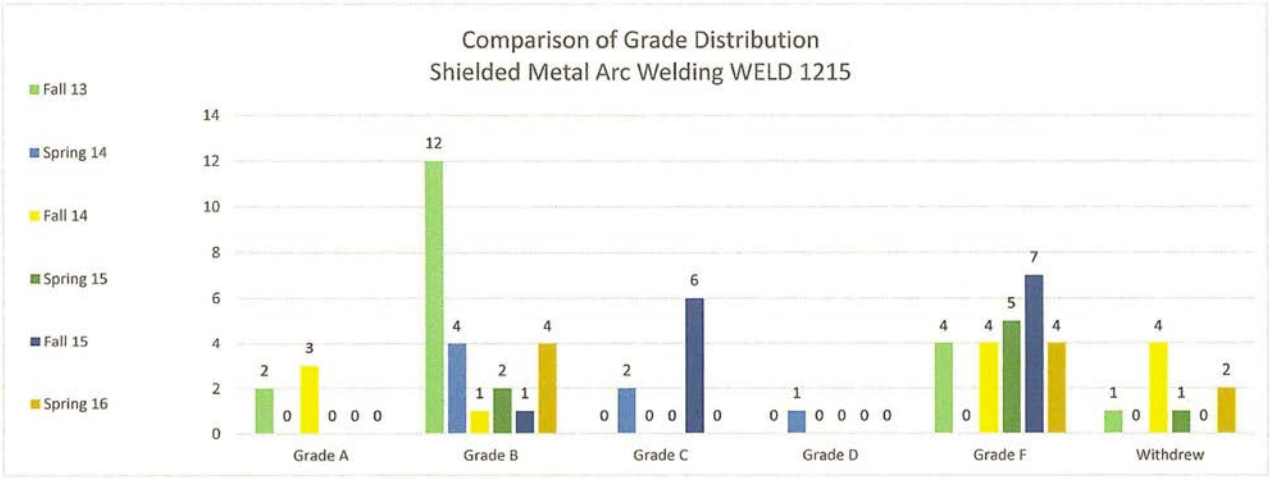
This is a 2 inch pipe weld done when a student first began his pipe welding class.

Post-Test Weld

The two pictures at the above are excellent welds by the same student at the end of Summer 2016 when he was completing his Pipe Welding course.

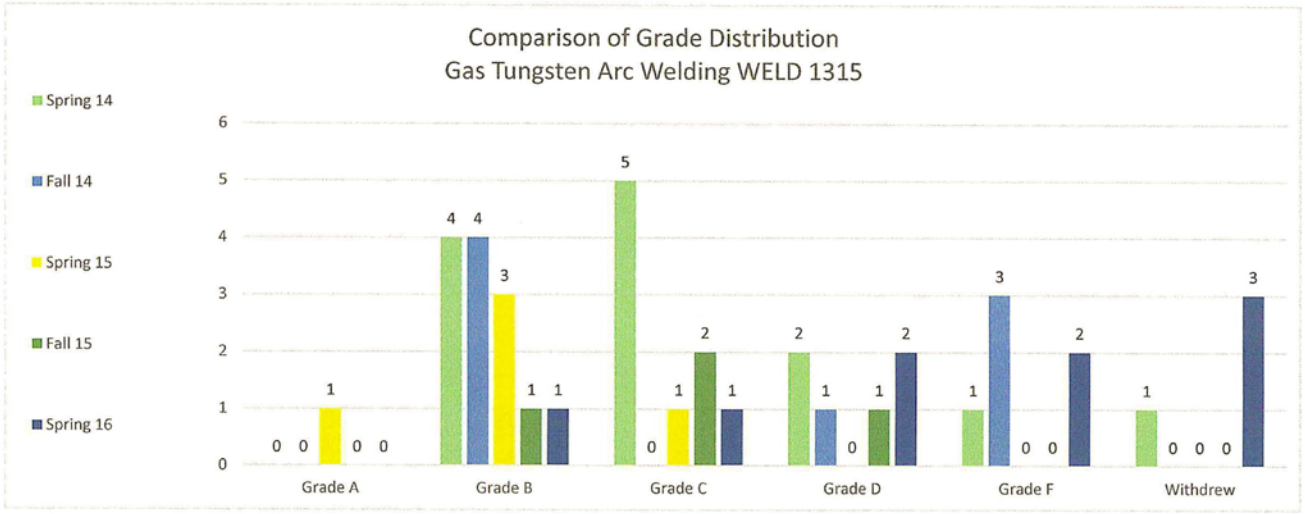
Comparison of Grade Distribution Basic Welding and Shielded Metal Arc Welding

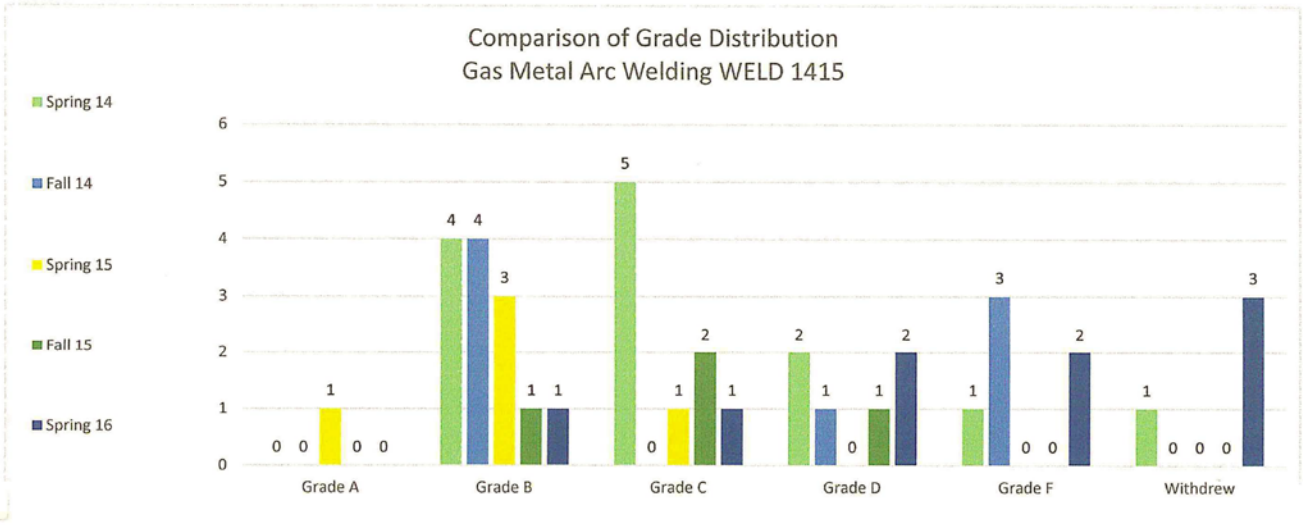




APENDIX E-1

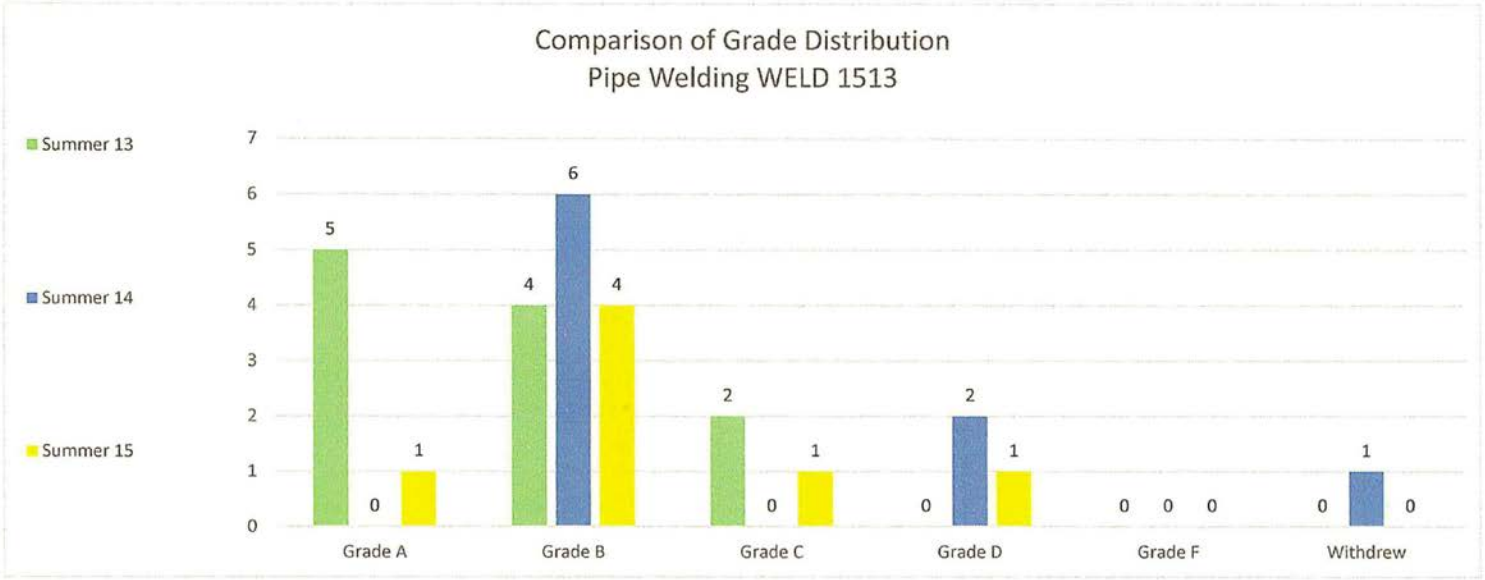
Comparison of Grade Distribution Gas Tungsten Arc Welding





APPENDIX E-2

Comparison of Grade Distribution Pipe Welding



PIPE WELDING IS THE FINAL WELDING COURSE. IT IS TAKEN DURING SUMMER TERM I AFTER SUCCESSFULLY COMPLETING ALL FOUR OF THE PRECEDING WELDING COURSES.

WELDING RUBRIC

Type of Weld/Project: ———————————— Student's Name:_____ Date:_____

Characteristics	Exceptional 5 Points	Advanced 4 Points	Proficient 3 Points	Basic Z Points	Below Basic or Unacceptable 0-1 Point	Points Earned
Slag:	100% removed. All slag chipped. Weld bead is clean.	Bead is clean; has been chipped and wire brushed.	Bead is somewhat clean.	Bead needs major chipping and brushing.	Shows little care about quality.	
Weld Width & Height:	100% uniform width and thickness throughout the entire length of each weld.	Bead is uniform width all along the length of each weld. Has a smooth	Bead maintains width and length. Shows some small	Not a uniform thickness throughout the weld. Thickness goes to	Weld is cut off in places; not uniform along the weld. Shows bare spots.	
Appearance:	100% smooth with uniform dense ripples; doesn't show the bead traveling too fast or slow.	Weld shows a constant speed and uniformity the entire length.	Weld shows a constant speed with some blemishes that	Weld shows definite areas of speeding up and slowing down. Ripples tend to be coarse.	Weld has been done too fast or too slow. Weld is not complete. Impurities are trapped in the weld.	
Face of Bead:	100% convex; free of voids and high spots, shows uniformity throughout the bead.	Has a nice rounded look. Is not overly high or low. Bead covers a wide area of each	Bead is well rounded; mostly uniform over the length of the weld. Shows some	Bead shows many high and low areas. Total lack of uniformity throughout the weld.	Weld does not blend into one single bead.	
Edge of Bead:	100% good fusion; no overlapping or undercutting.	Sides and edges are smooth blending into each weld. Undercutting kept to a minimum. Weld does not	Moderately smooth blending. Undercutting and float are present.	Float and undercut are very apparent. Weld lacks strength and flow.	Metal is burned through. Weld has no connection to metal.	
Beginning and Ending Full Size:	100% crater well filled.	End of each weld is complete; the line does not taper off	Weld ending is full but shows some tapering and a crater	Crater distinctly present at the	Metal is burned through at the end.	
Surrounding Plate/Pipe:	100% welding surface free of spatter.	Spatter is kept to a minimum.	Some spatter is present but not displeasing.	Spatter is in large amounts.	Splatter takes away from the integrity of the weld.	
Penetration:	100% complete without burn through	Weld penetrates deeply into the metal and adds strength and fusion to the edges	Weld penetrates deeply but does not re-surface	Weld is uneven in depth; lacks uniformity along weld length	Weld floats on top of the metal; has no strength,	
					Total Points Earned	
					Divided by total points	%

These pictures show an example of student's learning from the Blueprint Reading class. The students worked together as a team and engaged critical thinking and problem-solving skills, all of which are **skills** in demand in the workplace.

APPENDIX G

Key Words-Welding Procedure Specification, base metal, allowable joint designs, filler metal, carbon steel, manual shielded metal arc welding

AWS 82.1-1-022-94R

Approved by
American National Standards Institute
April 15, 1993

Standard Welding Procedure Specification (WPS) Shielded Metal Arc Welding of Carbon Steel (M-1/P-1/S-1, Group 1 or 2) 1/8 through 1-1/2 inch Thick, E6010 (Vertical Uphill) Followed by E7018 As-Welded or PWHT Condition

Prepared by
AWS Committee on Welding Qualification

Under the Direction of
AWS Technical Activities Committee

Approved by
AWS Board of Directors

Abstract

This standard contains the essential welding variables for carbon steel in the thickness range of 1/8 through 1-1/2 inch, using manual shielded metal arc welding. It cites the base metals and ·operating conditions necessary to make the weldment, the filler metal specifications, and the allowable joint designs for fillet and groove welds. This WPS was developed primarily for plate and structural applications.

American Welding Society
550 N.W. LeJeune Road, Miami, Florida 33126

Standard Welding Procedure Specification (WPS)

LIMITATIONS

This procedure is not qualified for Notch Toughness applications.

WELDING PROCESSES

Welding Processes:	SMAW (Shielded Metal Arc Welding)
Method of Application:	Manual

BASE METALS

Base Metal:[1]	Carbon Steel, M-1, P-1, or S-1, Group 1 or 2 to M-1, P-1, or S-1, Group 1 or 2
Thickness Range:	1/8 in. through 1-1/2 in. for groove welds, 1/8 in. minimum for fillet welds
Diameter:	*Groove* Welds: 1 in. minimum Fillet Welds: all diameters

FILLER METALS

Filler Metal Specification:[1]	ANSI/AWS AS. 1 or ASME SFA 5.1 A Number 1, F Number 3 for E6010, and F Number 4 for E7018
Classification:	E601O and E7018
Deposit Thickness Range:	1-1/2 in. maximum plus reinforcement for groove welds; the maximum deposit thickness for E601O electrode is limited to 3/8 in. (nominal) 1-1/2 in. fillet weld size for fillet welds; the maximum fillet deposit size for E601O electrode is limited to 3/8 in. (nominal)

JOINT DESIGNS

Joint Designs:	See Figure 1
Backing:	Not required
Backing Material:[1]	Carbon steel, M-1, P-1, or S-1, Group 1, 2, or 3 or carbon steel weld metal Nonmetallic or nonfusing metal retainers are not permitted

POSITIONS

Permitted Positions:	All
Vertical Progression:	Uphill

PREHEAT AND INTERPASS TEMPERATURES

Preheat Temperature: [2]	S0°F Minimum; 150°F Minimum for E601O on base metal thickness *over* 3/4 in. thick
Interpass Temperature:[2]	50°F Minimum, 500°F Maximum
Preheat Maintenance:	Continuous or special heating not required

1. M, P, and S numbers for base metal and F and A numbers for filler metal and weld metal, respectively, are as detailed in AWS 82.1 or ASME *Boiler and Pressure Vessel Code,* Section IX.
2. Preheat and interpass temperatures must be sufficient to prevent crack formation. Temperatures above the minimum shown may be required tor base metals with a specified carbon content greater than 0.25%, for highly restrained welds, or to meet the requirements of the fabrication document(s).

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Standard Welding Procedure Specification {WPS)

POSTWELD HEAT TREATMENT

Postweld Heat Treatment: Welds may either be as-welded or postweld heat treated at 1100 to 1200°F. If heat treated, the heat treatment time shall be 1 hour per inch of thickness (15 minutes minimum) unless otherwise noted in the fabrication document.

ELECTRICAL CHARACTERISTICS

Electrode[1]		Current	
Classification	Dia.[2] in.	Amperes	Polarity
E6010	3/32	40-80	DCEP (Reverse)
E6010	1/8	75-125	DCEP (Reverse)
E6010	5/32	110-170	DCEP (Reverse)

Electrode[1]		Current	
Classification	Dia.[2] in.	Amperes	Polarity
E7018	3/32	70-110	DCEP (Reverse)
E7018	1/8	90-150	DCEP (Reverse)
E7018	5/32	120-190	DCEP (Reverse)
E7018	3/16	170-280	DCEP (Reverse)

1. The care and storage of electrodes shall be as recommended by the electrode manufacturer.
2. 3/16 in. electrodes shall not be used for tack or root pass welding nor for welding in the vertical or overhead positions.

Pulsing Current: Not permitted

TECHNIQUE

Weave or Stringer Bead: Either

Peening: Not required; if used, proceed as directed by the fabrication document
Initial Cleaning: Chemical or mechanical; joint shall be dry prior to welding
Interpass Cleaning: Mechanical only
Backgouging: Mechanical or thermal when required by Figure 1
Gouging: Mechanical or thermal
Single or Multiple Passes: Either
Maximum Bead Thickness: 1/4 in.

COMPANY NAME _____

In the name of the Company stated above, I accept full responsibility for the application of this Standard WPS for use with:

_____ Dated_____

Fabrication Document(s): such as Code, Specification or Contract Document

DATE _____ APPROVED BY_____ TITLE_____

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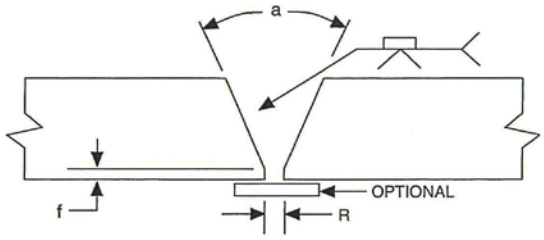
Standard Welding Procedure Specification (WPS)

FILLET WELDS: All Joints

GROOVE WELDS: See Joints 1 through 17. Joints having prequalified joint details permitted by the latest edition of ANSI/AWS D1.1, *Structural Welding Code-Steel* are also permitted.

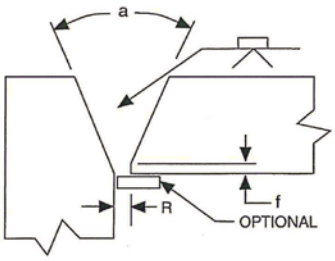
For tubular products, see Joints 1, 2, 6 and 7. In addition, joints having groove designs resulting from end preparations conforming with the latest edition of ANSI/ASME 816.25, *Butt Welding Ends,* are also allowable for application with this WPS.



WITH BACKING
a = 45° MIN.
R = 1/4 in., +1/4 -1/16
f = R/2

WITHOUT BACKING
a = 60° MIN.
R = 1/8 in., +1/16 -1/16
f = 1/16 in. MAX.

JOINT 1



WITH BACKING
a = 45° MIN.
R = 1/4 in., +1/4 -1/16
f = R/2

WITHOUT BACKING
a = 60° MIN.
R = 1/8 in., +1/16 -1/16
f = 1/16 in. MAX.

JOINT 2

Figure 1—Allowable Joint Designs

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QW-484 SUGGESTED FORMAT FOR WELDER/WELDI NG OPERATOR
PERFORMANCE QUALIFICATIONS (WPQ)
(See QW-301, Section IX, ASME Boiler and Pressure Vessel Code)

Welder's name _____ Soc.Sec.# _____ Stamp no.

Welding Process(es) used: **SMAW** Type Manual
(Manual, semiautomatic, machine, automatic)

Identification of WPS followed by welder during welding of test coupon B2.1-1-022-94R
Base material(s) welded SA36 Thickness .500
Filler metal specification (SFA) Class (QW-404) SFA 5.1

Manual or Semiautomatic Variables for Each Process (QW-350)	Actual Values	Range Qualified
Backing (metal, weld metal, welded from both sides, flux, etc.) (QW-402)	None	With or without
ASME P-No. P1 to P1 to ASME P-No. (QW-403)	P1 to P1	
(X) Plate ( ) Pipe (enter diameter, if pipe) (QW-403)	NA	
Base metal thickness - OFW (QW-403)	NA	
Filler metal F-No. (QW-404)	6010-F3 7018-F4	F1, F2, F3, F4
Filler metal product form [solid/core/flux-cored - GTNPAW (QW-404]	NA	
Consumable insert for GTAW or PAW (QW-404)	NA	
Weld deposit thickness for each welding process (QW-404)	.500	.Maximum
Welding position (1G, 5G, etc.) (QW-405)	2G, 3G, 4G	All
Progression (uphill/downhill) (QW-405)	Uphill	Uphill
Backing gas for GTAW, PAW, or GMAW; fuel gas for OFW (QW-408)	NA	
GMAW transfer mode (QW-409)	NA	
GTAW welding current type/polarity (QW-409)	NA	

Automatic/Machine Welding Variables for the Process Used (QW-360)	Actual Values	Range Qualified
Direct/remote visual control	X	X
Automatic voltage central (GTAW)	X	X
Automatic joint tracing	X	X
Welding position (1G,5G, etc.)	X	X
Consumable insert	X	X
Backing (metal, weld metal, welded from both sides, flux, etc.)	X	X
Multiple or single pass per side	X	X
Change from automatic to machine	X	X
Filler for EBW or LBW	X	X
Laser type	X	X
Drive type for FRW	X	X
Vacuum type for EBW		

Guided Bend Test Results

Guided Bend Tests Type (X) QW-462.2 (Side) Results ( ) QW-462.3(a) (Trans. R & F) Type ( ) QW-462.3(b) (Long, R & F) Results

Root Bend – 1	Acceptable	Face Bend -1	Acceptable
Root Bend -2	Acceptable	Face Bend –2	Acceptable
Root Bend -3	Acceptable	Face Bend –3	Acceptable

Visual Examination results (QW-302.4) No visible discontinuities - acceptable
Radiographic test results (QW-304 and QW-305 **NA**
(For alternative qualification of groove welds by radiography)
Fillet Weld – Fracture test **NA** Length and percent of defects **NA** in.
Macro test fusion **NA** Fillet leg size NA in.x in. Concavity/convexity **NA** In.
Welding test conducted by James H. DuBose III
Mechanical tests conducted by James H. DuBose III Laboratory test no. NA
We certify that the statements in this record are correct and that the test coupons were prepared, welded, and tested in accordance with the requirements of Section IX of the ASME Code.

Organization UAM College of Technology - Crossett

Date **11-21-15** By James H. DuBose III

This form (EOOOOB) may be obtained from the Order Dept., ASME, 22 Law Drive, Box 2300, Fairfield, NJ 07007-2300

Name: _ _ _ _ _ _ _ _ _ _ _ _

1412 WELD 1115 201
BASIC WELDING (8Wl)
MTWT 8:00 AM 1:00 PM
CR0401 Dubose III, James

Task	Date to complete	Finished date	Instructor/Student
Pads 6010	August 24 – August 30		
Pads 7018	August 30 - September 5		
T-Joint 6010	September 5 – September 12		
T-Joint 7018	September 12 – September 16		
Comer Joint-l G	September 16 – September 23		
Comer Joint-2G	September 23 - September 30		
Comer Joint-3G	September 30 – October 7		
Comer Joint-4G	October 7 - October 17		

Last day to drop with a W is **September 28**

Name: _____

1412 WELD 1115 201
BASIC WELDING (8W2)
MTWT 8:00 AM 1:00 PM
CR0401 Dubose III, James

Task	Date to complete	Finished date	Instructor/Student
Pads 6010	October 18 – October 21		
Pads 7018	October 21 – October 26		
T-Joint 6010	October 26 - October 31		
T-Joint 7018	October 31 – November 4		
Comer Joint-l G	November 4 – November 11		
Comer Joint-2G	November 11 - November 19		
Comer Joint-3G	November 19 – December 1		
Comer Joint-4G	December 1 – December 9		

Last day to drop with a W is **November 21**

Name: _____

1587 WELD 1215 201
SHIELDED ARC WELDING
T H 8:00 AM 1:00 PM (8Wl)
CR0401 Dubose III, James H

Yz inch V-Grove	Date to complete	Finished date	Instructor/student
lG-6010&7018	August 24 – September 6		
2G-6010&7018	September 7 - September 20		
3G-6010&7018	September 20 – October 4		
4G-6010&7018	October 4- October 17		

Last day to drop with a W is **September 28**

Name: _____

1587 WELD 1215 201
SHIELDED ARC WELDING
T H 8:00 AM 1:00 PM (8W2)
CR0401 Dubose III, James H

Yz inch V-Grove	Date to complete	Finished date	Instructor/student
lG-6010&7018	October 18 – October 24		
2G-6010&7018	October 24- November 7		
3G-6010&7018	November 7 - November 21		
4G-6010&7018	November 21 - December 9		

Last day to drop with a W is **November 21**

Name: _ _ _ _ _ _ _ _ _ _ _ _

1662 WELD 1315 201
GAS TUNG ARC WELD
MTWH 8:00 AM 1:00 PM (8Wl)
CR0401 Dubose III, James H

Task	Date to complete	Finished date	Instructor/Student
Comer Joint-l G	August 24 – August 31		
Comer Joint-2G	August 31 - September 6		
Comer Joint-3G	September 6 – September 13		
Comer Joint-4G	September 13 – September 20		
V-Groove -1G	September 20 – September 27		
V-Groove -2G	September 27 – October 4		
V-Groove -3G	October 4 – October 11		
V-Groove -4G	October 11 – October 17		

Last day to drop with a **W is September 28**

Name: _ _ _ _ _ _ _ _ _ _ _ _ _ _

1662 WELD 1315 201
GAS TUNG ARC WELD
MTWH 8:00 AM 1:00 PM (8W2)
CR0401 Dubose III, James H

Task	Date to complete	Finished date	Instructor/Student
Comer Joint-lG	October 18 – October 25		
Comer Joint-2G	October 25 - October 31		
Comer" Joint-3G	October 31- November 7		
Comer Joint-4G	November 7 – November 14		
V-Groove -1G	November 14 – November 21		
V-Groove -2G	November 22 - November 28		
V-Groove -3G	November 28 – December 5		
V-Groove -4G	December 5 – December 9		

Last day to drop with a **W is November 21**

Name: _ _ _ _ _ _ _ _ _ _ _ _

1661 WELD 1415 201
GAS METAL ARC WELD
MTWH 8:00 AM 1:00 PM
CR0401 Dubose III, James H

Task	Date to complete	Finished date	Instructor/Student
Comer Joint-1G	August 24 – August 31		
Comer Joint-2G	August 31 - September 6		
Comer Joint-3G	September 6 - September 13		
Comer Joint-4G	September 13 – September 20		
V-Groove -1G	September 20 -September 27		
V-Groove -2G	September 27 – October 4		
V-Groove -3G	October 4 – October 11		
V-Groove -4G	October 11 – October 17		

Last day to drop with a **W is September 28**

Name: _ _ _ _ _ _ _ _ _ _ _ _ _ _

1661 WELD 1415 201
GAS METAL ARC WELD
MTWH 8:00 AM 1:00 PM
CR0401 Dubose III, James H

Task	Date to complete	Finished date	Instructor/Student
Comer Joint-1G	October 18 – October 25		
Comer Joint-2G	October 25 - October 31		
Comer Joint-3G	October 31- November 7		
Comer Joint-4G	November 7 – November 14		
V-Groove -1G	November 14 – November 21		
V-Groove -2G	November 22 - November 28		
V-Groove -3G	November 28 -December 5		
V-Groove -4G	December 5 – December 9		

Last day to drop with a **W is November 21**