

WLDG 2450: Orbital Tube Welding

Welding Technology Department
Austin Community College

Riverside Office: (512) 223-6443
Round Rock Office: (512) 223-0358

SYLLABUS

Course Description

WLDG 2450: Orbital Tube Welding. An overview of welding in the semi-conductor and related industries. Special emphasis on the disciplines of orbital tube welding, including cutting, facing, and development of weld procedures. This is the Capstone Experience course for the Ultrahigh Purity Piping Certificate. Course Fee: \$50

Prerequisites

WLDG 1434 Introduction to Gas Tungsten Arc Welding (GTAW)

Course Rationale

To enjoy ourselves. To gain an understanding of how the orbital welding process works. The student will gain an insight into the high tech industry and clean room protocol. Special emphasis on the disciplines of orbital welding, cutting, facing, and development of welding procedures. The student will acquire an understanding of fittings, tubing, and tungsten used in the orbital welding process. Students will acquire the skills necessary to pursue a career in orbital welding.

Course Learning Outcomes

Describe the fitting, tubing, and tungsten used in the orbital tube welding process; and demonstrate skill in orbital tube welding, cutting, and facing.

Program Learning Outcomes

- Demonstrate welding skills sufficient to meet industry certified welder standards.
- Interpret codes and safety standards that pertain to the welding industry.
- Use proper hand, measuring, and layout tools, to fabricate welded projects or certification coupons.
- Demonstrate work attributes and ethics that contribute to personal success and towards employment goals.

SCANS Competencies

The U.S. Department of Labor appointed a Secretary's Commission on Achieving Necessary Skills (SCANS) to determine the general academic and workforce skills needed to succeed in the workplace. The Commission's purpose has been to encourage a vital national economy based on a highly skilled workforce. The Welding Technology Department at Austin Community College incorporates these SCANS competencies into its course offerings by means of classroom

instruction, lab exercises, student interaction, and specific work-related assignments. A listing of the SCANS competencies for each welding course is as follows:

Program: Welding Technology- Code Welding										
List of All Courses Required and Identified Competencies										
Competencies								Course	CIP: 48.0508	
1	2	3	4	5	6	7	8	Number	Course Title	
X	X	X	X	X	X	X	X	NDTE-1405	Introduction to Ultrasonic Testing	
X	X	X	X	X	X	X	X	NDTE-2401	Advanced Ultrasonics	
X	X	X	X	X	X	X	X	NDTE-2411	Preparation for Certified Welding Inspector Exam	
X	X	X	X	X	X	X	X	WLDG-1337	Introduction to Welding Metallurgy	
X	X	X	X	X	X	X	X	WLDG-1413	Introduction to Blueprint Reading for Welders	
X	X	X	X	X	X	X	X	WLDG-1417	Introduction to Layout and Fabrication	
X	X	X	X	X	X	X	X	WLDG-1427	Welding Codes and Standards	
X	X	X	X	X	X	X	X	WLDG-1428	Introduction to Shielded Metal Arc Welding (SMAW)	
X	X	X	X	X	X	X	X	WLDG-1430	Introduction to Gas Metal Arc Welding (GMAW) & (FCAW)	
X	X	X	X	X	X	X	X	WLDG-1434	Introduction to Gas Tungsten Arc Welding (GTAW)	
X	X	X	X	X	X	X	X	WLDG-1435	Introduction to Pipe Welding- API 1104	
X	X	X	X	X	X	X	X	WLDG-1457	Intermediate Shielded Metal Arc Welding (SMAW)	
X	X	X	X	X	X	X	X	WLDG-2179	Welder Qualification	
X	X	X	X	X	X	X	X	WLDG-2288	Internship-Welding Technology/ Welder	
X	X	X	X	X	X	X	X	WLDG-2431	Advanced Blueprint Interpretation and Cost Analysis	
X	X	X	X	X	X	X	X	WLDG-2450	Orbital Tube Welding	
X	X	X	X	X	X	X	X	WLDG-2451	Advanced Gas Tungsten Arc Welding	
X	X	X	X	X	X	X	X	WLDG-2453	Advanced Pipe Welding- ASME Section IX	
X	X	X	X	X	X	X	X	WLDG-2471	Structural Connections	
								COMPETENCY REFERENCES		
								8. PERSONAL QUALITIES		
								7. THINKING SKILLS		
								6. BASIC SKILLS		
								5. TECHNOLOGY		
								4. SYSTEMS		
								3. INFORMATION		
								2. INTERPERSONAL		
1. RESOURCES										

Further information about SCANS can be found at the following ACC website:
<http://www.austincc.edu/mkt/scans.php>

Required Texts/ Materials

Required Supplies: There are a number of required tools for this course. Please see the supply list in this syllabus.

Instructional Methodology

You will receive four hours of college credit when you successfully complete this course. During the fall and spring semesters, the course will meet for sixteen weeks scheduled in one of the following formats: (1) twice weekly for 2:35 hours per class, or (2) once weekly for 5:20 hours per class. During the summer, the course will meet 16 times: (1) twice weekly for 5:10 hours per class. Regardless of format, the total class time for this course is eighty clock hours.

Tuition is charged at the rate posted in the current *Course Schedule*, depending upon whether you live in-district, out-of-district, or out-of-state. In addition, there is a \$50.00 course fee to cover welding electrodes, gases, practice metal and incidental consumables, plus a \$3.00 annual fee which provides you with an accident insurance policy (\$25.00 deductible).

Grading Policy

Your final grade will be based on your progress throughout the semester in the areas of applied skills (projects) and theory (examinations), weighted as follows:

1. Projects.....60%
2. Exams/ Other Assignments....40%

Your applied skills will develop as you progress through the *Project List* given later in this syllabus. The *Project List* contains important accumulative projects, so your final applied skills grade will be based on the percentage of projects you complete.

Theory is also an important part of this course. While applied skills are invaluable for learning *what* to do, a welding technician must also know the theory behind *why* things happen. Your instructor will provide appropriate written exams to measure your understanding of welding theory.

When calculating the above percentages, the following grading system is used at Austin Community College:

A—Excellent	90% - 100%	Grade Points 4
B—Good	80% - 89%	3
C—Satisfactory	70% - 79%	2
D—Minimum Pass	60% - 69%	1
F—Fail	59% - 00%	0

NOTE: A grade of D or below may not be applied toward any Welding Technology award.

Attendance/ Class Participation

Regular and punctual class and laboratory attendance is expected of all students. If attendance or compliance with other course policies is unsatisfactory, the instructor may withdraw students from the class. If you accumulate unexcused absences exceeding 10% of the total eighty clock-hours required for this course by the Texas Higher Education Coordinating Board, you will be dropped from class. You will receive the grade of **W**. If the final semester withdrawal date has passed, you will receive the grade of **F**.

Your absences will be recorded on the last page of your *Projects List* presented at the back of this syllabus. It is your responsibility—not your instructor's—to keep track of your absences.

Excessive absences result in (1) your failure to progress towards the objectives of the course, (2) unfair demands on your instructor's time by taking him/her away from responsible students in order to catch you up on missed assignments, and most important (3) you become an increased safety risk due to your diminished familiarity with hazardous equipment and safety protocols.

In the event the college or campus closes due to unforeseen circumstances (for example, severe weather or other emergency), the student is responsible for communicating with their professor during the closure and completing any assignments or other activities designated by their professor as a result of class sessions being missed.

Withdrawal from Classes

It is the responsibility of each student to ensure that his or her name is removed from the roll should he or she decide to withdraw from the class. The instructor does, however, reserve the right to drop a student should he or she feel it is necessary. If a student decides to withdraw, he or she should also verify that the withdrawal is submitted before the Final Withdrawal Date. The student is also strongly encouraged to keep any paperwork in case a problem arises.

Students are responsible for understanding the impact that withdrawal from a course may have on their financial aid, veterans' benefits, and international student status. Per state law, students enrolling for the first time in Fall 2007 or later at any public Texas college or university may not withdraw (receive a W) from more than six courses during their undergraduate college education. Some exemptions for good cause could allow a student to withdraw from a course without having it count toward this limit. Students are strongly encouraged to meet with an advisor when making decisions about course selection, course loads, and course withdrawals.

Students who enroll for the third or subsequent time in a course taken since Fall, 2002, may be charged a higher tuition rate, for that course.

Makeup Work

If you must make up work at a class time other than that for which you are scheduled, you must comply with the following rules:

1. You must sign in using the sheet found in the tool room at Round Rock, or in the white notebook posted on the wall next to the hall door leading into Welding Laboratory 3122 at Riverside. This is a liability insurance requirement.
2. You must have the approval and supervision of a faculty member at all times while you are working. You must notify that person when you arrive and leave. You must not work unattended.
3. When you have finished working, you must clean up your work area, sign out, and inform the faculty member on duty that you are leaving.

Incomplete Grades

An incomplete (grade of "I") will only be given for extenuating circumstances. What constitutes "extenuating circumstances" is left to the instructor's discretion. If a grade of I is given, the remaining course work must be completed by a date set by the student and professor. This date may not be later than two weeks prior to the end of the following semester. A grade of I also requires completion and submission of the

Incomplete Grade form, to be signed by the faculty member (and student if possible) and submitted to the department chair.

Students may request an Incomplete from their faculty member if they believe circumstances warrant. The faculty member will determine whether the Incomplete is appropriate to award or not. The following processes must be followed when awarding a student an I grade.

1. Prior to the end of the semester in which the “I” is to be awarded, the student must meet with the instructor to determine the assignments and exams that must be completed prior to the deadline date. This meeting can occur virtually or in person. The instructor should complete the Report of Incomplete Grade form.
2. The faculty member will complete the form, including all requirements to complete the course and the due date, sign (by typing in name) and then email it to the student. The student will then complete his/her section, sign (by typing in name), and return the completed form to the faculty member to complete the agreement. A copy of the fully completed form can then be emailed by the faculty member to the student and the department chair for each grade of Incomplete that the faculty member submits at the end of the semester.
3. The student must complete all remaining work by the date specified on the form above. This date is determined by the instructor in collaboration with the student, but it may not be later than the final withdrawal deadline in the subsequent long semester.
4. Students will retain access to the course Blackboard page through the subsequent semester in order to submit work and complete the course. Students will be able to log on to Blackboard and have access to the course section materials, assignments, and grades from the course and semester in which the Incomplete was awarded.
5. When the student completes the required work by the Incomplete deadline, the instructor will submit an electronic Grade Change Form to change the student’s performance grade from an “I” to the earned grade of A, B, C, D, or F.

If an Incomplete is not resolved by the deadline, the grade automatically converts to an “F.” Approval to carry an Incomplete for longer than the following semester or session deadline is not frequently granted.

Course Outline/ Calendar

A list of projects is included in this syllabus. You will move through the projects for this course at your own pace; however, advancement is at the discretion of your professor. Your professor will provide test dates and deadlines.

Please note that schedule changes may occur during the semester. Any changes will be announced in class and posted as a Blackboard Announcement (or other resource faculty is using to communicate).

Health & Safety Protocols

Operational areas of ACC campuses and centers are fully open and accessible through all public entrances. While some health & safety protocols are no longer mandatory, the college encourages its staff, faculty, and students to be mindful of the well-being of all individuals on campus. If you feel sick, feverish, or unwell, please do not come to campus.

Some important things to remember:

- If you have not done so, ACC encourages all students, faculty, and staff to get vaccinated. COVID-19 vaccines are now widely available throughout the community. Visit www.vaccines.gov/ to find a vaccine location near you.
- Campuses are open to faculty, staff, and students. The college and its departments and offices may invite internal and external guests to their events and activities, though access is still restricted for external parties seeking to host activities at ACC. The college's Appian Health Screening App remains available to everyone who visits campus. This continues to be a good way to check your own health before coming to class or work.
- If you are experiencing COVID-19-related symptoms, please get a COVID-19 test as soon as possible before returning to an ACC facility. Testing is now widely available. To find testing locations near you, follow this link (<https://www.austincc.edu/coronavirus/covid-19-vaccinations>).
- If you test positive, please report it on the [ACC self-reporting tool located here](#).
- ACC continues to welcome face masks on campus. Per CDC guidelines, face masks remain a good way to protect yourself from COVID-19.
- The college asks that we all continue to respect the personal space of others. We are encouraging 3 feet of social distancing.
- Please be sure to carry your student, faculty, or staff ID badge at all times while on campus.

Because of the ever-changing situation, please go to ACC's Covid website at <https://www.austincc.edu/coronavirus?ref=audiencemenu> for the latest updates and guidance.

Statement on Academic Integrity

Austin Community College values academic integrity in the educational process. Acts of academic dishonesty/misconduct undermine the learning process, present a disadvantage to students who earn credit honestly, and subvert the academic mission of the institution. The potential consequences of fraudulent credentials raise additional concerns for individuals and communities beyond campus who rely on institutions of higher learning to certify students' academic achievements, and expect to benefit from the claimed knowledge and skills of their graduates. Students must follow all instructions given by faculty or designated college representatives when taking examinations, placement assessments, tests, quizzes, and evaluations. Actions constituting scholastic dishonesty include, but are not limited to, plagiarism, cheating, fabrication, collusion, falsifying documents, or the inappropriate use of the college's information technology resources. Further information is available at <https://www.austincc.edu/about-acc/academic-integrity-and-disciplinary-process>

Student Rights and Responsibilities

Students at ACC have the same rights and protections under the Constitution of the United States. These rights include freedom of speech, peaceful assembly, petition and association. As members of the community, students have the right to express their own views, but must also take responsibility for according the same rights to others and not interfere or disrupt the learning environment. Students are entitled to fair treatment, are expected to act consistently with the values of the college, and obey local, state, and federal laws. www.austincc.edu/srr

As a student of Austin Community College you are expected to abide by the Student Standards of Conduct.

<https://www.austincc.edu/students/students-rights-and-responsibilities/student-standards-of-conduct>

Senate Bill 212 and Title IX Reporting Requirements

Under Senate Bill 212 (SB 212), the faculty and all College employees are required to report any information concerning incidents of **sexual harassment, sexual assault, dating violence, and stalking** committed by or against an ACC student or employee. Federal Title IX law and College policy also require reporting incidents of **sex- and gender-based discrimination and sexual misconduct**. **This means faculty and non-clinical counseling staff cannot keep confidential information about any such incidents that you share with them.**

If you would like to talk with someone confidentiality, please contact the District Clinical Counseling Team who can connect you with a clinical counselor on any ACC campus: (512) 223-2616, or to schedule online: <https://www.austincc.edu/students/counseling> .

While students are not required to report, they are encouraged to contact the Compliance Office for resources and options: Charlene Buckley, District Title IX Officer, (512) 223-7964; compliance@austincc.edu .

If a student makes a report to a faculty member, the faculty member will contact the District Title IX Officer for follow-up.

Student Complaints

A defined process applies to complaints about an instructor or other college employee. You are encouraged to discuss concerns and complaints with college personnel and should expect a timely and appropriate response. When possible, students should first address their concerns through informal conferences with those immediately involved; formal due process is available when informal resolution cannot be achieved.

Student complaints may include (but are not limited to) issues regarding classroom instruction, college services and offices on the basis of actual or perceived race, color, national origin, religion, age, gender, gender identity, sexual orientation, political affiliation, or disability.

Further information about the complaints process, including the form used to submit complaints, is available at:

<http://www.austincc.edu/students/students-rights-andresponsibilities/student-complaint-procedures>

Statement on Privacy

The Family Educational Rights and Privacy Act (FERPA) protects confidentiality of students' educational records. Grades cannot be provided by faculty over the phone, by e-mail, or to a fellow student.

Recording Policy

To ensure compliance with the Family Education Rights and Privacy Act (FERPA), student recording of class lectures or other activities is generally prohibited without the explicit written permission of the instructor and notification of other students enrolled in the class section. Exceptions are made for approved accommodations under the Americans with Disabilities Act.

Recording of lectures and other class activities may be made by faculty to facilitate instruction, especially for classes taught remotely through BlackBoard Collaborate or another platform. Participation in such activities implies consent for the student to be recorded during the instructional activity. Such recordings are intended for educational and academic purposes only.

ACC Safety Statement

Health and safety are of paramount importance in classrooms, laboratories, and field activities. Students are expected to learn and comply with ACC environmental, health and safety procedures and agree to follow ACC safety policies. Emergency Procedures posters and Campus Safety Plans are posted in each classroom and should be reviewed at the beginning of each semester. All incidents (injuries/illness/fire/property damage/near miss) should be immediately reported to the course instructor. Additional information about safety procedures and how to sign up to be notified in case of an emergency can be found at <http://www.austincc.edu/emergency>

Everyone is expected to conduct themselves professionally with respect and courtesy to all. Anyone who thoughtlessly or intentionally jeopardizes the health or safety of another individual may be immediately dismissed from the day's activity and will be referred to the Dean of Student Services for disciplinary action.

In the event of disruption of normal classroom activities due to an emergency situation or an illness outbreak, the format for this course may be modified to enable completion of the course. In that event, students will be provided an addendum to the class syllabus that will supersede the original version.

Campus Carry Notification

The Austin Community College District concealed handgun policy ensures compliance with Section 411.2031 of the Texas Government Code (also known as the Campus Carry Law), while maintaining ACC's commitment to provide a safe environment for its students, faculty, staff, and visitors. Beginning August 1, 2017, individuals who are licensed to carry (LTC) may do so on campus premises except in locations and at activities prohibited by state or federal law, or the college's concealed handgun policy. In addition, **concealed weapons are not allowed on ACC-sponsored field trips** where the school owns or has chartered or leased vehicles for transportation.

It is the responsibility of license holders to conceal their handguns at all times. Persons who see a handgun on campus are asked to contact the ACC Police Department by dialing 222 from a campus phone or 512-223-7999. Please refer to the concealed handgun policy online at austincc.edu/campuscarry.

IMPORTANT: Welding classes are held in an area designated as an exclusion zone as defined by state law or the college's concealed handgun policy. Concealed carry is prohibited in exclusion zones. Concealed weapons must be stored in a secure place as defined by college policy prior to entering the classroom, studio, or learning space.

Discrimination Prohibited

The College seeks to maintain an educational environment free from any form of discrimination or harassment including but not limited to discrimination or harassment on the basis of race, color, national origin, religion, age, sex, gender, sexual orientation, gender identity, or disability.

Faculty at the College are required to report concerns regarding sexual misconduct (including all forms of sexual harassment and sex and gender-based discrimination) to the Manager of Title IX/Title VI/ADA Compliance. Licensed clinical counselors are available across the District and serve as confidential resources for students.

Additional information about Title VI, Title IX, and ADA compliance can be found in the ACC Compliance Resource Guide available at:

<https://drive.google.com/file/d/1o55xINAWNvTYgI-fs-JbDyuaMFDNvAjz/view>

Use of ACC Email

All College e-mail communication to students will be sent solely to the student's ACCmail account, with the expectation that such communications will be read in a timely fashion. ACC will send important information and will notify you of any college related emergencies using this account. Students should only expect to receive email communication from their instructor using this account. Likewise, students should use their ACCmail account when communicating with instructors and staff. Instructions for activating an ACCmail account can be found at <http://www.austincc.edu/accmail/index.php>.

Use of the Testing Center

The Testing Centers will allow only limited in person testing and testing time will be limited to the standard class time, typically one and one-half hours. Specifically, only the following will be allowed in the Testing Centers:

- Student Accessibility Services (SAS) Testing: All approved SAS testing
- Assessments Tests: Institutionally approved assessment tests (e.g., TSIA or TABE)
- Placement Tests: Placement tests (e.g., ALEKS)
- Make-Up Exams (for students who missed the original test): Make-up testing is available for all lecture courses but will be limited to no more than 25% of students enrolled in each section for each of four tests

- Programs incorporating industry certification exams: Such programs (e.g., Microsoft, Adobe, etc.) may utilize the ACC Business Assessment Center for the industry certification exams (BACT) at HLC or RRC

STUDENT SUPPORT SERVICES

The success of our students is paramount, and ACC offers a variety of support services to help, as well as providing numerous opportunities for community engagement and personal growth.

Student Support

ACC strives to provide exemplary support to its students and offers a broad variety of opportunities and services. Information on these campus services and resources is available at <http://www.austincc.edu/students>. A comprehensive array of student support services is available online at: <https://www.austincc.edu/coronavirus/remote-student-support>

Student Accessibility Services

Austin Community College (ACC) is committed to providing a supportive, accessible, and inclusive learning environment for all students. Each campus offers support services for students with documented disabilities. Students with disabilities who need classroom, academic or other accommodations must request them through Student Accessibility Services (SAS).

Students are encouraged to request accommodations when they register for courses or at least three weeks before the start of each semester they are enrolled, otherwise the provision of accommodations may be delayed. Students who have received approval for accommodations from SAS for this course must provide the instructor with the legal document titled “Notice of Approved Accommodations (NAA)” from SAS.

Until the instructor receives the NAA from the student accommodations should not be provided. Once the NAA is received, accommodations must be provided. Accommodations are not retroactive, so it is in the student’s best interest to deliver the NAA on the first day of class.

Please contact SAS@austincc.edu for more information.

Academic Support

ACC offers academic support services on all of its campuses. These services, which include face-to-face and online tutoring, academic coaching, and supplemental instruction, are free to enrolled ACC students. Tutors are available in a variety of subjects ranging from accounting to pharmacology. Students may receive these services on both a drop-in and referral basis.

An online tutor request can be made here:

<https://de.austincc.edu/bbsupport/online-tutoring-request/>

Additional tutoring information can be found here: austincc.edu/onlinetutoring

Student Technology Support

Austin Community College provides free, secure drive-up WiFi to students and employees in the parking lots of all campus locations. WiFi can be accessed seven days a week, 7 am to 11 pm. Additional details are available at <https://www.austincc.edu/sts>.

Students who do not have the necessary technology to complete their ACC courses can request to borrow devices from Student Technology Services. Available devices include iPads, webcams, headsets, calculators, etc. Students must be registered for a credit course, Adult Education, or Continuing Education course to be eligible. For more information, including how to request a device, visit <http://www.austincc.edu/sts>.

Student Technology Services offers phone, live-chat, and email-based technical support for students and can provide support on topics such as password resets, accessing or using Blackboard, access to technology, etc. To view hours of operation and ways to request support, visit <http://www.austincc.edu/sts>.

Library Services

ACC Library Services offers both in-person and extensive online services, with research and assignment assistance available in-person during limited hours of service. Although all college services are subject to change this fall, plans include ACC students signing up for study space and use of computers at open libraries, extensive online instruction in classes, online reference assistance 24/7 and reference with ACC faculty librarians. In addition, currently enrolled students, faculty and staff can access Library Services online (also 24/7) via the ACC Library website and by using their ACCeID to access all online materials (ebooks, articles from library databases, and streaming videos). ACC Libraries offer these services in numerous ways such as: "Get Help from a Faculty Librarian: the 24/7 Ask a Librarian chat service," an online form for in-depth research Q and A sessions, one-on-one video appointments, email, and phone (voicemail is monitored regularly).

- Library Website: <http://library.austincc.edu>
- Library Information & Services during COVID-19: <https://researchguides.austincc.edu/LSinfoCOVID19>
- Ask a Librarian 24/7 chat and form: <https://library.austincc.edu/help/ask.php>
- Library Hours of Operation by Location: <https://library.austincc.edu/loc/>
- Email: library@austincc.edu

Personal Support

Resources to support students are available at every campus. To learn more, ask your professor or visit the campus Support Center. All resources and services are free and confidential. Some examples include, among others:

- Food resources including community pantries and bank drives can be found here: <https://www.centraltexasfoodbank.org/food-assistance/get-food-now>
- Assistance with childcare or utility bills is available at any campus Support Center: <http://www.austincc.edu/students/support-center>.

- The Student Emergency Fund can help with unexpected expenses that may cause you to withdraw from one or more classes: <http://www.austincc.edu/SEF>.
- Help with budgeting for college and family life is available through the Student Money Management Office: <http://sites.austincc.edu/money/>.
A full listing of services for student parents is available at:
<https://www.austincc.edu/students/child-care>
- The CARES Act Student Aid will help eligible students pay expenses related to COVID-19:
<https://www.austincc.edu/coronavirus/cares-act-student-aid>.

Mental health counseling services are available throughout the ACC Student Services District to address personal and or mental health concerns: <http://www.austincc.edu/students/counseling> .

If you are struggling with a mental health or personal crisis, call one of the following numbers to connect with resources for help. However, if you are afraid that you might hurt yourself or someone else, call 911 immediately.

Free Crisis Hotline Numbers:

- Austin / Travis County 24-hour Crisis & Suicide hotline: **512-472-HELP (4357)**
- The Williamson County 24-hour Crisis hotline: **1-800-841-1255**
- Bastrop County Family Crisis Center hotline: **1-888-311-7755**
- Hays County 24 Hour Crisis Hotline: **1-877-466-0660**
- National Suicide Prevention Lifeline: **1-800-273-TALK (8255)**
- Crisis Text Line: **Text “home” to 741741**
- Substance Abuse and Mental Health Services Administration (SAMHSA) National Helpline: **1-800-662-HELP (4357)**
National Alliance on Mental Illness (NAMI) Helpline: **1-800-950-NAMI (6264)**

Student Organizations

ACC has over seventy student organizations, offering a variety of cultural, academic, vocational, and social opportunities. They provide a chance to meet with other students who have the same interests, engage in service-learning, participate in intramural sports, gain valuable field experience related to career goals, and much else. Student Life coordinates many of these activities, and additional information is available at <http://sites.austincc.edu/sl/>.

Important Information on Advising

If you have decided to pursue a degree or certificate in Welding Technology, it is essential that you obtain departmental advising *immediately*. There are several critical obligations that students overlook, then later expect the College to make exceptions for their oversight when the time comes to graduate. It is your responsibility to obtain a copy of the *ACC College Catalog* and stay informed of your obligations:

1. **Failure to Follow a Degree or Certificate Plan:** It is imperative that you adhere to a welding degree or certificate plan outlined in the *ACC College Catalog* current at the time of your initial enrollment. It is your responsibility to seek out the appropriate departmental advisor to work with you in preparing a degree plan, and to approve restricted electives, course substitutions, and course challenges (if allowed). Failure to do

so can result in your graduation application being denied until such time that you comply with College policy.

2. Texas Success Initiative (TSI): Texas law created the Texas Success Initiative (TSI), which requires all degree-seeking students to take the Texas Higher Education Assessment (THEA) test or an approved alternative. Students may forgo TSI assessment if they meet one of the waivers or exemptions listed in the *ACC College Catalog*.
3. Inadequate Record Keeping: From the time you first enroll, you should create a home file and keep records of your paperwork each semester. As a minimum, these records should include your degree plan, TSI scores, enrollment records, payment receipts, and semester grade reports.
4. Application for Graduation: If you are eligible for graduation with a degree or certificate in Welding Technology, you must submit your application for graduation no later than the posted deadline. This deadline comes early in the semester, so consult the current *ACC Academic Calendar* for the exact date. Then, apply for graduation through your student Online Services account. Do not miss this deadline or you will forfeit graduating that semester.
5. Failure to Apply for Certificates Before Applying for a Degree: You cannot receive a certificate at the same time (or after) you receive your Associate of Applied Science degree. Certificates are progressive awards received in stair-step fashion on the way to completing your associate's degree. You should apply for them as soon as you have completed their requirements—not wait until the same semester that you apply for your degree. If you have a question, contact the ACC Graduation Office at (512) 223-7018.
6. Minimum Grades for Graduation: Only grades of C or better may be applied toward any degree, certificate, or award in Welding Technology. This applies to courses taken at ACC and to credits transferred from any other institution.
7. Transferability: Transferability of workforce courses varies. Students interested in transferring courses to another college should speak with their Area of Study (AoS) advisor, Department Chair, and/or Program Director.

For More Information

It is your responsibility to stay informed regarding the policies and deadlines that affect you as a student. This information can be found in the following sources, which can be found online or obtained in the Admissions Office of Building G on the Riverside Campus:

1. *Course Schedule (online)*
2. *Academic Calendar (online)*
3. *Student Handbook (free; also available online)*
4. *College Catalog (nominal charge; also available online)*

Annual Course Offerings

You should note that ***not all courses are offered each semester*** and should arrange your schedule accordingly. Advanced courses with low demand are generally scheduled only once annually.

Be aware of prerequisites as you plan your semesters.

You may contact the Welding Department office (512-223-6443) with questions.

Laboratory Policy

1. You must attend class at the time for which you are enrolled.
2. When you complete a project, request approval from your instructor. You will not be credited for unproved projects.
3. Cleanup time is ten minutes before the end of class. Sweep your immediate work area and return equipment to the tool room. Surrounding work areas must be cleaned with the combined efforts of all students.
4. Do not waste metal. Cut away practice welds and consolidate pieces. Do not remove metal from the shop. This will help keep lab fees reasonable in the face of rising costs for steel.
5. If there is an equipment malfunction, inform your instructor immediately so that it can be repaired and returned to service.
6. Smoking is not permitted on campus.

NOTE: Persistent violation of these procedures as well as specific procedures outlined by your instructor may cause you to be considered a safety risk and be removed from the class or withdrawn for the semester.

Safety Regulations

Welding can become very dangerous—even fatal—if you are careless and neglect safety precautions. Most accidents occur when people get in a hurry, so learn to pace yourself and move cautiously and deliberately. The College endeavors to provide you with proper training and a safe environment, but you must also do your part by abiding by the following rules. *If you persistently violate these rules, you will be considered a safety risk and will be withdrawn from class:*

1. Wear your safety glasses at all times.
2. Wear your ear plugs in areas of high noise levels.
3. Wearing earbuds or headphones is prohibited while in the laboratories.
4. Know the locations and proper use of fire extinguishers. They are located at the exit to every classroom and laboratory.
5. Do not weld or grind near oxy-fuel tanks, manifold connections, or other potential sources for gas leaks.
6. Beware of the signs of dehydration, especially during warm months: disorientation, confusion, light-headedness, flushed appearance, headache, exhaustion. Do not wait until these signs appear—drink fluids and take breaks regularly.
7. Be mindful of proper ventilation in your work area.
8. When using portable grinders, be sure that you direct sparks away from others.
9. When using stationary pedestal grinders, be sure that the tool rest is adjusted as close to the grinding wheel as possible without touching it (1/16"). Always wear safety glasses when grinding and wire brushing. Do not wear gloves when using pedestal grinders.
10. Do not handle oxy-fuel equipment with oil or grease on your hands or clothing.
11. Do not wear loose or dangling clothing, jewelry, or hair when welding or handling materials.
12. Be sure that you have the proper shade of filter lens in your welding helmet or face shield.
13. Do not attach your ground lead to water pipes or electrical conduit.
14. When welding in a booth, keep your door closed. When welding in an open area, shield your arc with welding curtains. Always consider the line-of-sight between your arc and the eyes of bystanders.

15. To avoid burns to others, do not discard hot metal without first quenching it. Write “**HOT**” on objects too large to bring to the quench tank.
16. Read Chapter 2: “Safety in Welding” in your textbook by Larry Jeffus, Welding Principles and Applications, mentioned later in this syllabus.
17. Report all accidents to your instructor without delay. If you suspect an unsafe condition or an equipment malfunction, bring it to you instructor’s attention *IMMEDIATELY*.

Special Warning about Bloodborne Pathogens

A number of very serious Bloodborne Pathogens lurk in today’s public environments that can be devastating to your health—even fatal:

- HIV — Human Immunodeficiency Virus
- AIDS — Acquired Immunodeficiency Syndrome
- Hepatitis A, B and C
- Tetanus — “lockjaw”
- MRSA — Methicillin Resistant Staphylococcus Aureus
- Necrotizing Fasciitis — “flesh-eating disease”

If you sustain a nick, cut, puncture, abrasion, or any wound in which blood surfaces—however minor—*cease all activity immediately* and proceed to a First Aid Kit to apply antiseptic and a protective bandage. Time is critical in treating Bloodborne Pathogens. Notify your instructor, who will call Campus Police for further assessment, and if necessary, Austin Emergency Medical Services will be notified.

You will need to fill out the following forms, as appropriate, to activate your student liability insurance. If your injury requires emergency room treatment, it is much easier to have your forms with you at the time of admittance. It is infinitely more tedious getting signatures from treating physicians and hospital personnel days after the occurrence. These forms are attached to the cabinet doors of the First Aid Kits:

1. Student Accident Liability Form
2. First Aid Log
3. Incident Reporting Form

Supplies – All are required. Not having these required tools will affect your grade for this course.

You are **required** to purchase the following items for your classes. You are preparing to enter the profession of welding, and like other technical crafts, it requires specialized tools and equipment. Higher quality tools cost more initially, but they tend to last longer and usually result in savings over time.

Most tools are needed on the first day of class, some are needed by week 2. All other tools are required by mid-term.

1. Safety glasses*
2. Welding hood with replacement cover lenses *
3. Welding cap
4. Boots or high-top shoes*
5. Gauntlets or gloves, according to your class*
6. Leather sleeves or jacket – (Not required if only taking WLDG 1434 - Intro to GTAW)*
7. Long sleeve heavy cotton work shirt*
8. Cutting glasses, shade 3 or 5*
9. Hand wire brush*
10. Chipping hammer*
11. Vice Grip™ 10R, or 10WR, or 10CR, or 12LC (at least one vice grip)*
12. Striker with flint replacements*
13. Soapstone*
14. needle-nose pliers with side cutter, if taking a GMAW course (Welder's Plier such as Welpers™ recommended)*
15. 12" combination square with steel blade, or 6" speed square*
16. 4½" diameter angle grinder** – **must have by end of week 2**
17. Extra grinding disks (1/4"x4 ½")** - **must have by end of week 2**
18. Extra wire wheels (4 ½") ** - **must have by end of week 2**
19. retractable tape measure ** - **must have by end of week 2**
20. Ear plugs ** - **must have by end of week 2**
21. 2-lb ball or cross peen hammer
22. 10" crescent wrench
23. Tool box or bucket or tool bag
24. Face shield with clear lenses
25. Oxy/Fuel tip cleaner
26. ¼" center punch
27. ½" cold chisel
28. Vice Grips™, two 11R each
29. Pipe wrap: medium size

***Indicates needed on first day of class**

****Must have by end of week 2**

These items can be obtained from one of the Austin area welding suppliers below. Most items can also be purchased from any hardware store.

Airgas Southwest
11,111 North Lamar Blvd.
(512) 835-0202
Austin, Texas
On North Lamar between
Kramer and Braker Lanes

Alamo Welding Supply
613 Chicon
(512) 476-9400
Austin, Texas
Eleven blocks east of I-35
between 6th and 7th Streets

Praxair Distribution
2801 Montopolis Drive
(512) 389-2323
Austin, Texas
On Montopolis north of Ben White Blvd.
across from the entrance to Sematech

Texas Welding Supply
4705 Commercial Park Drive
(512) 272-9353
Austin, Texas
East of Highway 183 off Springdale Road

Round Rock Welding Supply
1400 North Industrial Boulevard
(512) 828-3200
Round Rock, Texas
Highway 79 exit, left under I-35, right at Chisolm, second
street to left, located behind Gattiland

Precision Oxygen
4927 East 5th Street
385-2247
Austin, Texas
On East 5th Street four blocks
east of Springdale Road

Matheson Tri-Gas (San Marcos)
3016 Highway 123
San Marcos, Texas
(512) 396-3926
2.5 miles east of I-35

Matheson Tri-Gas (Austin)
3519 East 5th Street
(512) 385-0611
Austin, Texas
At the corner of East 5th Street
and Springdale Road

Red Ball Oxygen
335 Commercial Dr
Buda, TX 78610
512-523-8146

Course Outline

1. OTW MACHINE
 - A. Set-up and Operation
 - B. Controls and Functions
 - C. Programming Operations
 - D. Troubleshooting
 - E. Development of Weld Procedure
2. OTW HEAD
 - A. Set-up and Operation
 - B. Servicing and Maintenance
 - C. Troubleshooting
3. TUNGSTEN
 - A. Sizes
 - B. Types
 - C. Shape
 - D. Length
4. TERMINOLOGY of FITTINGS
 - A. Sizes
 - B. Dimensions
 - C. Shapes
5. CUTTING
6. FACING
7. BLUE PRINTS
 - A. Takeoffs (MATH)
8. CLEANROOM PROTOCOL and PROCEDURES
 - A. Do's and Don'ts
9. TUBING
 - A. Manufacturing Processes
 - B. Metallurgy
 - C. Care and Handling

Withdrawal for Excessive Absences

WARNING—READ CAREFULLY! If you accumulate unexcused absences exceeding 10% of the total eighty clock-hours required for this course by the Texas Higher Education Coordinating Board, you will be dropped from class. You will receive the grade of **W**. If the final semester withdrawal date has passed, you will receive the grade of **F**.

Your absences will be recorded on the last page of your *Projects List* presented at the back of this syllabus. It is your responsibility—not your instructor's—to keep track of your absences.

Excessive absences result in (1) your failure to progress towards the objectives of the course, (2) unfair demands on your instructor's time by taking him/her away from responsible students in order to catch you up on missed assignments, and most important (3) you become an increased safety risk due to your diminished familiarity with hazardous equipment and safety protocols.

If it becomes necessary for you to withdraw yourself from this course, consult the calendar in the current Course Schedule for the last day to withdraw and still receive the grade of **W** (approximately two weeks before the end of the semester). It is not your instructor's responsibility to remind you of this date. If you are failing and do not withdraw in time, you will be locked in with no way to avoid the final course grade of **F**.

Fall or Spring classes which meet two times per week:

First Absence

Second Absence

Third and Final Absence

Fall or Spring classes which meet one time per week:

First Absence

Second and Final Absence

Summer classes which meet two times per week:

First Absence

Second and Final Absence

WLDG 2450: Orbital Tube Welding

Welding Technology Department
Austin Community College

Office: (512) 223-6443
Austin, Texas 78741
Round Rock, Texas 78665

SAFETY AGREEMENT

By signing my name below, I am attesting that my instructor has made me aware that welding is dangerous if I ignore applicable safety regulations and laboratory policies. I understand that I will acquire the knowledge of these regulations and policies by (1) reading the course syllabus attached to this *Safety Agreement*, (2) reading the applicable chapters on safety in my textbook (if applicable), (3) observing all safety and warning signs posted in the laboratories and classroom, and (4) attending in-class safety demonstrations on equipment and shop practices given by my instructor throughout the course. I understand that it is my responsibility to attend class regularly, be alert to my surroundings, and remain constantly vigilant to the risks of working in an industrial environment. I understand that “safe practice” is the discretionary interpretation of my instructor, and that if I fail to adhere to these requirements—including the *attendance policy outlined in the syllabus*—I will be considered a safety risk to myself and others and I may be withdrawn or possibly fail the course.

By signing this form, I also attest that I will acquire all required tools and supplies as listed within the course syllabus.

Finally, I agree that I will consult the college’s web page (<https://www.austincc.edu/coronavirus?ref=audiencemenu>) for current information regarding COVID19 related policies and procedures.

Student
(print name)

Student
Signature

Student Phone

Student Email

Instructor

Semester/ Year

Emergency
Contact Person

Emergency Phone

[End of Document]