

SAM HOUSTON STATE UNIVERSITY
COLLEGE OF ARTS AND SCIENCES
COURSE SYLLABUS

AGR 564

ADVANCED ARC WELDING PRINCIPLES AND PROCEDURES

3 CREDIT HOURS

SPRING 2008

LOCATION OF CLASS MEETING: AMC Rm101 and LAB

Th 12:20 - 4:20 P.M .

INSTRUCTOR: Joe E. Muller, Ph.D., Associate Professor – Ag Mechanization

OFFICES:, Thomason Bldg, Rm 309 and, Agricultural Mechanization & Technology Center, Rm 100.

CONTACT INFORMATION:

Thomason Bldg (936) 294-1218

AMC (936) 294 4877

Home (979) 774-1503

E-mail: jemuller@shsu.edu

OFFICE HOURS: as posted or by appointment

TEXTBOOK: (Required). Welding, Deere and Company, Moline, Illinois

ADDITIONAL REFERENCES:

The Procedure Handbook of Arc Welding, Lincoln Electric Company

Modern Welding Technology, Cary & Helzer, 6th Edition, Pearson, /Prentice Hall Publishing Co.

Current Manufacturer's and Distributor's Literature

COURSE OBJECTIVES:

The primary objectives of this course are to survey current and emerging technologies in metallic and non metallic cutting and joining processes and materials utilized in the industry. The opportunity for the development of technical understanding and skills in joining plastics, epoxies and polymers, gas tungsten arc welding (GTAW), gas metal arc welding (GMAW), shielded metal arc welding (SMAW), and plasma arc and oxy-fuel cutting and welding processes will be provided. In addition welding metallurgy, hardfacing, and destructive and non-destructive weld testing, quality and environmental control; and work placed supervision and management will be covered.

Upon completion of the course, the student should be able to:

- Discuss the metallurgical properties of common metals and alloys used in the construction and fabrication industry.
- Discuss the technical theories and operational procedures of the oxy-fuel and plasma-arc cutting processes.
- Discuss the technical theories and operational procedures of common plastic and polymer material joining processes.
- Discuss the technical theories and operational procedures of gas tungsten arc welding (GTAW), gas metal arc welding (GMAW), and shielded metal arc welding (SMAW) processes.
- Discuss the technical theories and operational procedures of metal surfacing processes.

Interpret welding specification procedures (WPSs).

Discuss industry approved destructive and non-destructive weld testing and failure analysis procedures.

Select appropriate cutting or welding process, equipment, consumable supplies and procedures and perform cost analysis for a proposed fabrication or repair job.

Demonstrate competencies in each of the processes sufficient to gain successfully employment in training, supervision and/or management careers in metallic and non-metallic material construction and fabrication related industries.

COURSE FORMAT:

This course will utilize a combination of lecture, demonstrations, research papers, student presentations, technical field trips as can be scheduled and supervised practice. A printed copy of research paper(s) assigned must be submitted in class and an electronic copy must be submitted thru Blackboard as a Turnitin Assignment. The system will check the paper for plagiarism and originality.

COURSE EVALUATION:

Exams 60 %

Laboratory activities, research papers and assignments 40 %

INSTRUCTOR EVALUATIONS:

You will be asked to complete a course/instructor evaluation form toward the end of the semester.

DEPARTMENT OF AGRICULTURAL SCIENCES ATTENDANCE POLICY:

1. Regular and punctual attendance is expected of each student in the Department of Agricultural Sciences at Sam Houston State University.

1. Each faculty member will keep a written record of student attendance.

2. If a student misses four or more classes, the student's grade may be reduced by one letter grade. Additional penalties will be up to the discretion of the professor.

3. Three unexcused or unjustified tardies or early departures are considered one absence.

4. Excused absences must be documented by the student with a letter of confirmation from the sponsoring student organization, professor or doctor. Exemptions will include participation in departmental activities when prior approval is attained from the Department Chair or the sponsoring professor.

ACADEMIC DISHONESTY:

All students are expected to engage in all academic pursuits in a manner that is above reproach. Students are expected to maintain complete honesty and integrity in the academic experiences both in and out of the classroom. Any student found guilty of dishonesty in any phase of academic work will be subject to disciplinary action. The University and its official representatives may initiate disciplinary proceedings against a student accused of any form of academic dishonesty including, but not limited to, cheating on an examination or other academic work which is to be submitted, plagiarism, purchasing papers collusion and the abuse of resource materials. Any such action will result in failing that exam, research paper, assignment, or the entire course, and a letter of explanation placed in the student's file.

DISRUPTIVE CONDUCT:

Students will refrain from behavior in the classroom or lab that intentionally or unintentionally disrupts the learning process and, thus, impedes the mission of the university. Cellular telephones and pagers

must be turned off before class begins. Students are prohibited from using tobacco products

, making offensive remarks, reading non-class materials, sleeping, talking at inappropriate times, wearing inappropriate clothing, or engaging in any other form of distraction. Inappropriate use of lap-top computers during class or lab will not be tolerated. Inappropriate behavior in the classroom or lab shall result in a directive to leave.

Students who are especially disruptive also may be reported to the Dean of Students for disciplinary action in accordance with university policy.

VISITORS IN THE CLASSROOM:

Unannounced visitors to class must present a current, official SHSU identification card to be permitted in the classroom. They must not present a disruption to the class by their attendance. If the visitor is not a registered student, it is at the instructor's discretion whether or not the visitor will be allowed to remain in classroom.

AMERICANS WITH DISABILITIES ACT:

It is the policy of Same Houston State University that no otherwise qualified disabled individual shall, solely by reason of his/her handicap, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any academic or Student Life program or activity. Disabled students may request assistance with academically related problems stemming from individual disabilities by contacting the Director of Counseling Center in the Lee Drain Annex or by calling (936) 294-1720. If you have a disability that may adversely affect your work in this class, then I encourage you to register with the Counseling Center and to talk with me about how I can best help you. All disclosures of disabilities will be kept strictly confidential. NOTE: no accommodation can be made until you register with the Counseling Center.

STUDENT ABSENCES ON RELIGIOUS HOLY DAYS POLICY:

Section 51.911(b) of the Texas Education Code requires that an institution of higher education excuse a student from attending classes or other required activities, including examinations, for the observance of a religious holy day, including travel for that purpose. A student whose absence is excused under this subsection may not be penalized for that absence and shall be allowed to take an examination or complete an assignment from which the student is excused within a reasonable time after the absence.

University policy 861001 provides the procedures to be followed by the student and instructor. A student desiring to absent himself/herself from a scheduled class in order to observe (a) religious holy day(s) shall present to each instructor involved a written statement concerning the religious holy day(s). This request must be made in the first fifteen days of the semester or the first seven days of a summer session in which the absence(s) will occur. The instructor will complete a form notifying the student of a reasonable timeframe in which the missed assignments and/or examinations are to be completed.