

SAM HOUSTON STATE UNIVERSITY
COLLEGE OF SCIENCE AND ENGINEERING TECHNOLOGY
DEPARTMENT OF AGRICULTURAL SCIENCES

COURSE SYLLABUS

AGET 4381-W

ADVANCED AGRICULTURAL MECHANICS

3 CREDIT HOURS

FALL 2017

LOCATION AND TIME OF CLASS AND LAB MEETING:

WILLIAM R. HARRELL AGRICULTURAL ENGINEERING TECHNOLOGY CENTER

CLASS TUESDAY - 1:00 TO 1:50

LAB TUESDAY 2:00 TO 5:50

INSTRUCTOR: Joe E. Muller, Ph.D. Professor – Agricultural Engineering Technology

OFFICE: William R. Harrell Agricultural Engineering Technology Center

CONTACT INFORMATION:

AETC (936) 294 - 4877 FAX (936) – 294 - 3660

OFFICE HOURS: as posted or by appointment

COURSE DESCRIPTION: AGET 4381 is a lecture/laboratory course. Approximately 1 hour lecture and 4 hours laboratory instruction will be held each class day. The lecture portion of the course will be devoted to technical information, demonstrations, and problem solving activities. The laboratory portion will provide students with opportunities to develop and apply skills and techniques needed by persons planning to teach agricultural sciences, enter into agricultural production, or attain employment in related occupations. A study of basic requirements for the development of safe and efficient agricultural mechanics laboratories, agricultural service centers, and fabrication shops will be covered. Skills covered include fabrication and maintenance of metal, wood, and masonry equipment and structures and the selection, operation, and maintenance of power shop tools and equipment. AGET 2303 or a strong background in agricultural mechanization is required as a prerequisite.

COURSE OBJECTIVES: Upon completion of this course, a student should be able to:

1. Discuss and develop safe laboratory and construction facility safety plans. Select proper construction and metal fabrication equipment for a task.
2. Plan, design and layout laboratory and fabrication facilities including space requirements, color coding and safety zones.
3. Discuss proper ventilation and fume extraction procedures for high school laboratory and metal fabrication facilities
4. Set-up adjust and safe operate proper construction and metal fabrication equipment.
5. Hand draw and/or use CAD to develop plans for fabrication projects.
6. Develop bill of materials and cut lists
7. Calculate developed length of pipe for bending bow.
8. Set-up, operate and safely bend pipe bows.
9. Layout and construct projects.
10. Set-up and properly operate metal working and fabrication tools and equipment.
11. Set-up and properly operate oxy-fuel cutting equipment.
12. Set-up and properly operate plasma cutting equipment.
13. Set-up and properly operate SMAW and GMAW equipment for the fabrications of metal projects.
14. Set-up and properly operate wood working tools and equipment.

15. Discuss the proper construction of agricultural science and technology projects in high school programs for contest, shows and fairs as a teaching and motivational tool.

TEXTBOOK: (Required)

Metal Fabrication Technology for Agriculture 2ND Edition_ Larry Jeffus

ISBN # 9781435498570

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.
2. Each faculty member will keep a written record of student attendance. Students will be expected to sign in for class and labs to comply with new federal guidelines.
3. 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.
4. Three unexcused or unjustified tardies or early departures are considered one absence.
5. 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.

COURSE EVALUATION:

This is a "W" course, which means that at least 50 percent of your course grade will be derived from writing activities designed to help you master course objectives. Writing in this course is one of the tools your instructor will use to help you learn course material. Some writing activities will require you to draft and revise your work, with or without instructor feedback. The majority of test and quizzes will include open-ended, short answer, and essay type questions requiring you to utilize critical thinking skills and communicate technical subject matter in written form. Students will be required to keep a daily written journal of activities they performed and/or instructor demonstrated during laboratory sessions including step by step procedures and safety precautions relevant to school and/or workplace safety. Journal is to be assembled in a notebook or binder file and turned in at end of semester for evaluation.

Each class member taking this course will be responsible for identifying a topic relevant to a new and emerging technology in agricultural engineering. The student is to research the development of the process and the current status, the materials, equipment, procedures and recommended applications and develop a research paper. Advanced approval of the topic area is required and will be granted on a first-come first-served basis. Information is to be written up in approved research paper format. Report is to be typed or computer generated. Paper should be a minimum of five pages excluding any pictures, charts, graphs, references and bibliography. A printed hard copy must be submitted in class and an electronic copy must be submitted thru Blackboard as a Turn-it-in Assignment. The system will check the paper for plagiarism and originality.

Regular exams, quizzes, assignments including project plans and bill-of-materials, problem sets, final exam, journal and research paper	50.00%
Class attendance	10.00%
Lab Activities and Performance	30.00%

Grade will be based on daily individual participation and progress, housekeeping and safety practices.

No exams or assignments will be given at alternative times unless arrangements are made with the professor before the scheduled activity occurs.

1. At the discretion of the professor, up to a 10 % penalty may be assessed for late exams or assignments. At the discretion of the professor, a 100% essay make-up exam may be given.
2. Final Exam is comprehensive.

ADDITIONAL COURSE ASSIGNMENT FOR STUDENT TAKING COURSE FOR GRADUATE CREDIT

Each class member taking this course for graduate credit will be responsible for identifying a topic relevant to new and emerging technologies of in agricultural engineering technology. The student is to research the development of the topic and develop a research paper. Advanced approval of the topic area is required and will be granted on a first-come first-served basis. Information is to be written up in approved research paper format. Report is to be typed or computer generated. Paper should be a minimum of eight pages double-spaced with standard margins. Eight pages excludes any pictures, charts, graphs, references and bibliography. A printed hard copy must be submitted in class and an electronic copy must be submitted thru Blackboard as a Turn-it-in Assignment. The system will check the paper for plagiarism and originality.

Each class member taking this course for graduate credit will then be responsible to give a class 15 to 20 minute presentation and laboratory demonstration if appropriate over the topic to the rest of the AGET 4381 students. The presentation should be presented as if it was given to an advanced high school, adult education, or on-job continuing education training class.

LABORATORY ASSIGNMENTS, ACTIVITIES AND REQUIRED SUPPLIES:

Demonstrations will be given as needed on a group or an individual basis.

1. Much of the laboratory time will be spent on the design and construction of group projects to allow students to apply skills and technical knowledge in a practical setting under direct supervision.
2. Students will be responsible for a detailed, scale drawing and bill-of-materials for an assigned project.
3. Students will be required to maintain a journal notebook that contains class and laboratory notes.
4. Safety, good housekeeping and proper use of tools and equipment will be stressed. Each student is to provide industrial quality eye protection (safety glasses), leather welding gloves, a steel tape measure, and proper shoes and clothes for metal fabrication and welding. Safety glasses and other appropriate PPE are to be worn at all times. Points may be subtracted from laboratory grades and or student dismissed from lab for repeated failure to wear proper eye protection and/or follow safety procedures or instructions. It is expected that students will clean the entire laboratory at the conclusion of each laboratory period. The laboratory will not be considered clean until all tools and equipment are properly shut-down and stored.

ACADEMIC DISHONESTY AND 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. Students are prohibited from making offensive remarks, sleeping, talking at inappropriate times, wearing inappropriate clothing, or engage in any other form of distraction. Inappropriate behavior in the classroom shall result in a directive to leave class. Students who are especially disruptive also may be reported to the Dean of Students for disciplinary action in accordance with university policy.

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.

Cellular telephones, text messengers, any communication function on laptop computers, and/or any other similar devices **must be turned off before class or lab begins**. Arrangements for handling potential emergency situations must be arranged before the class or lab period begins at the discretion of the instructor. The use of any device that performs communication functions during any test period is prohibited. Such devices may not be used even for their calculator functions.

Failure to comply with this policy could result in expulsion from the classroom or lab, or with multiple offenses, failure of the course. These devices should not be present during a test or should be stored securely in such a way that they cannot be seen or used. Even the visible presence of such a device during a test period may result in a zero for that test. The use of these devices during a test is considered de facto evidence of cheating and could result in a charge of academic dishonesty (see student code of conduct)

<http://www.shsu.edu/students/guide/StudentGuidelines2010-2012.pdf#page=29>).

TOBACCO POLICY: In order to promote a healthy, safe, and aesthetically pleasing work, educational, and living environment, Sam Houston State University (SHSU) will endorse a smoke free and tobacco free environment. Tobacco products include cigarettes, cigars, pipes, smokeless tobacco, and all other tobacco

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.

STUDENTS WITH DISABILITIES POLICY:

It is the policy of Sam Houston State University that individuals otherwise qualified shall not be excluded, solely by reason of their disability from participation in any academic program of the university. Further, they shall not be denied the benefits of these programs nor shall they be subjected to discrimination. SHSU adheres to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations for students with disabilities. Any student with a disability that affects his/her academic performance should contact the Office of Services for Students with Disabilities in the SHSU Lee Drain Annex (telephone 936-294-3512, TDD 936-294-3786) to request accommodations. All disclosures of disabilities will be kept strictly confidential. **NOTE:** No accommodation can be made until you register with the Services for Students with Disabilities. For a complete listing of the university policy, see:

<http://www.shsu.edu/dept/academic-affairs/documents/aps/students/811006.pdf>

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.

INSTRUCTOR EVALUATIONS:

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