

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

COURSE SYLLABUS

AGET 3380

AGRICULTURAL MACHINERY

3 CREDIT HOURS

FALL 2017

LOCATION OF CLASS MEETING: RM 100

WILLIAM R. HARRELL AGRICULTURAL ENGINEERING TECHNOLOGY CENTER

CLASS TIMES: M and W, 8:00 to 8:50 AM

LOCATION OF LAB MEETING:

WILLIAM R. HARRELL AGRICULTURAL ENGINEERING TECHNOLOGY CENTER

LAB TIME: M – 1:00 TO 2:50 PM

INSTRUCTOR: JOE E. MULLER, PH.D.,  
PROFESSOR – AGRICULTURAL ENGINEERING TECHNOLOGY

CONTACT INFORMATION:

OFFICE: William R. Harrell Agricultural Engineering Technology Center  
(936) 294 4877

E-mail: [jemuller@shsu.edu](mailto:jemuller@shsu.edu)

OFFICE HOURS: as posted or by appointment

COURSE DESCRIPTION: Functional requirements, design, construction, adjustments, operation, and testing of agricultural machines including capacities and costs of operation are covered through classroom lecture, demonstrations, hands-on laboratory activities and field trips.

COURSE OUTLINE: AGET 3380 is a 2-2 course, 2 hours lecture and 2 hours laboratory per week. Lecture will include technical information, procedures, discussion, and problem solving activities. Lab and field trips will include problems and hands-on activities relating to agricultural machinery.

COURSE OBJECTIVES: An understanding of the operation, repair, maintenance, and management of modern agricultural machinery and equipment and their systems is necessary for success in production, processing, and distribution of agricultural commodities and the related careers opportunities in, sales, management, and service.

Upon completion of this course you should be able to:

1. Discuss and recognize common agricultural machinery safety hazards including human operator factors.
2. Discuss principles of operation of power units and power trains used in agricultural machinery.
3. Discuss current technological trends in use of mechanization in agriculture.
4. Make evaluations and calculations concerning basic design, operation, maintenance, and management aspects of agricultural machinery.
5. Discuss employment opportunities in agricultural mechanization and technology.
6. Explain how power is measured and transferred from one point to another to perform work.
7. Discuss the principles of operation of belt, chain, hydraulic, pneumatic, and mechanical lever power

systems

8. Discuss principles of soil tillage and explain operation, adjustments service and repair of primary and secondary tillage equipment.
9. Discuss principles of operation, adjustments service and repair of planting and seeding equipment.
10. Discuss principles of operation, adjustments service and repair of chemical application equipment.
11. Discuss principles of operation, adjustments service and repair hay and forage harvesting equipment.
12. Discuss machinery management strategies and perform necessary calculations included in the selection, lease/purchase/custom operation options, maintenance and repair of agricultural machinery.
13. Perform basic adjustment, service and repair on agricultural machinery in a safe manner.
14. Discuss the use of geographic information systems, remote sensing, and global positioning systems in modern precision farming operations.

TEXTS: (Required)

**Farm Power and Machinery Management Donnell Hunt**

ISBN# 9781478626961

**Introduction to Agricultural Engineering Technology Field and Solie**

ISBN# 9780387369136

**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.
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.

**LABORATORY ACTIVITIES:**

One or more pieces of equipment may be disassembled for service and repair, observation, or demonstration in the laboratory. Each student is to take notes and maintain a lab notebook.

Safety, good housekeeping and proper use of tools and equipment will be stressed. Each student is to provide industrial quality eye protection (safety glasses), proper shoes and clothes for laboratory activities. 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.

Students will keep the laboratory clean and in order. Lab will not be dismissed until all tools and equipment is returned to the proper storage location and the floor is properly clean and swept.

## RESEARCH PAPER:

Each student is required to develop a research paper over a subject related to the use of new technology in agricultural machinery. To avoid possible duplication of specific topics, ***advanced approval of topics by the instructor*** is required and will be granted on a first-come first-served basis. The paper is to have five typed pages of text plus a cover and bibliography page. At least three major references are to be listed. The bibliography and any tables, charts, pictures, etc. do not count as part of the five pages of text. The paper is expected to be neat as well as mechanically and grammatically correct. Students are encouraged to utilize the Sam Houston Writing Center for assistance.

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.

## COURSE EVALUATION:

Exam # 1	150 pts
Exam # 2	150 pts
Exam # 3	150 pts
Class attendance and performance	100 pts
Lab work and assignments (random)	300 pts
Research paper	100 pts
Final Exam	150 pts

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.

**FIELD TRIPS:** Field trips may be planned throughout the semester as student/instructor schedules and contacts with businesses and industries allow. Because of possible travel time from the SHSU campus, it may be that a field trip will take longer than normal class/lab schedules allow. If so, other class/lab release time may be given.

**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 products. This policy applies to all faculty, staff, students, employees of contractors, and visitors of Sam Houston State University on the premises of the university.

**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 an on-line course/instructor evaluation form toward the end of the semester.