AGM 425
Mobile Hydraulics in Agriculture
Spring 2020

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Office: Agricultural Engineering Technology Shop
Office Hours: M - none, T 3:00 to 5:00, W 1:00 to 5:00, R 4:00 to 5:00, F 9:00 – 12:00
Department: Agriculture
Class meeting time and place: Lectures TR 11:00 to 11:50 and labs T 1:00 – 2:50 in AET shop building, room 110

COURSE OBJECTIVE:

To teach students a wide range of basic hydraulic concepts, principles, and applications relative to mobile agricultural operations.

Program Learning Outcomes:

Properly size hose for a mobile hydraulic circuit
Calculate hydraulic horsepower
Calculate required pump size for a given application
Calculate cylinder extending/retracting speeds in a hydraulic system
Assemble hydraulics circuits using hydraulic trainer
Identify hydraulics components

Text and Materials:

The text is Hydraulics, Fundamentals of Service, published by Deere and Company. Other good references are Mobile Hydraulics Manual by Eaton Hydraulics Training, Industrial Fluid Power, published by Womack Educational Publications, and Mobile Hydraulic Technology by Parker Hannifin Corporation. A calculator will be needed in most labs and many lectures and should, therefore, be brought to lab and class routinely.
Course Requirements:

Three exams                                  300 points
Comprehensive Final Exam                       150 points
Lab exercises                                150 points
Attendance & punctuality                       100 points
                                                700 points

Grading Policy:

630 – 700 points = A
560 – 629 points = B
490 – 559 points = C
420 – 489 points = D
   0 – 419 points = F

Course Calendar:

Hydraulics – How it Works
Safety Rules for Hydraulics
Symbols Used in Fluid Power Diagrams
Hydraulic Pumps
Hydraulic Valves
Hydraulic Cylinders
Hydraulic Motors
Hydraulic Accumulators
Hydraulic Filters
Reservoirs and Oil Coolers
Hoses, Pipes and Couplers
Hydraulic Seals
Hydraulic Fluids
General Maintenance
Diagnosis and Testing of Hydraulic Systems
Student Conduct:

• **Responsible Use of Technology**: It is expected that all students will only use personal electronic devices outside of class time or when appropriate in class. Answering a cell phone, texting, listening to music or using a laptop computer for matters unrelated to the course may be grounds for dismissal from class or other penalties. Photographing tests, lab exercises, or any other course paperwork without permission is prohibited. Recording lectures or labs is prohibited without permission.

• **Classroom Behavior**: Disruptive, distracting, or disrespectful behavior will not be tolerated. Students who disrupt the learning environment may be asked to leave class and may be subject to judicial, academic, or other penalties. The instructor shall have full discretion over what behavior is appropriate/inappropriate in the classroom.

**Tobacco Free Campus**

Use of all forms of tobacco are strictly forbidden anywhere in the AET building and compound. Concealed carry is permitted but this does not include hiding a tobacco product between the cheek and gum.

**Attendance Policy:**

Students are expected to attend all classes and labs. Over 15% of the class grade is determined by attendance. A tardy is equal to an absence; if you miss roll call your attendance grade will suffer. If you arrive after roll call do not ask for attendance credit. Treat this class as you would treat a job – be where you are supposed to be when you are supposed to be there. Except for excused absences, exams and lab exercises cannot be made-up. Excused non-emergency absences must be coordinated in advance or they will be treated as unexcused. Make-up for emergency absences should be coordinated immediately upon return to class.

**Academic Integrity**

Academic integrity is a responsibility of all university faculty and students. Faculty members promote academic integrity in multiple ways including instruction on the components of academic honesty, as well as abiding by university policy on penalties for cheating and plagiarism.
Definition of Academic Dishonesty - Academic dishonesty includes both cheating and plagiarism. Cheating includes but is not limited to (1) using or attempting to use unauthorized materials to aid in achieving a better grade on a component of a class; (2) the falsification or invention of any information, including citations, on an assigned exercise; and/or (3) helping or attempting to help another in an act of cheating or plagiarism. Plagiarism is presenting the words or ideas of another person as if they were your own. Examples of plagiarism are (1) submitting an assignment as if it were one's own work when, in fact, it is at least partly the work of another; (2) submitting a work that has been purchased or otherwise obtained from an Internet source or another source; and (3) incorporating the words or ideas of an author into one's paper without giving the author due credit. You may read the complete policy at http://www.sfasu.edu/policies/academic_integrity.asp.

Withheld Grades Semester Grades Policy

Ordinarily, at the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the course work because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If students register for the same course in future terms the WH will automatically become an F and will be counted as a repeated course for the purpose of computing the grade point average.

Students with Disabilities

To obtain disability related accommodations, alternate formats and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 468-3004 / 468-1004 (TDD) as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services in a timely manner may delay your accommodations. For additional information, go to http://www.sfasu.edu/disabilityservices/.
### Program Learning Outcomes

1. The student will demonstrate competence of technical subject matter (Technical)
2. The student will exhibit problem solving skills. (Problem Solving)
3. The student will demonstrate effective communication skills. (Communication)
4. The student will exhibit leadership and other interpersonal skills needed for career placement and advancement. (Leadership)

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<tr>
<th>Course</th>
<th>PLO 1 Technical</th>
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B-Basic | I-Intermediate | A-Advanced | M-Mastery