Fundamentals of Agricultural Technology
AGM 120
Fall 2018

Name: Dr. Craig Morton

Email: rangermorton1972@yahoo.com (not the university email address)

Phone: (936) 468-4250

Office: Agricultural Engineering Technology building, enter on west side

Office Hours:

Monday
None

Tuesday
9:00 – 12:00

Wednesday
11:00 – 12:00
1:00-2:00
4:00 – 5:00

Thursday
None

Friday
9:00 – 12:00
1:00 – 2:00

Other times by appointment

Department: Agriculture
Class meeting time and place:

MWF 8:00 – 8:50, Agriculture building, room 110; labs in Agricultural Engineering Technology building, room 110 (M 3:00–4:50, T 1:00-2:50 & 3:00-4:50, W 2:00-3:50)

Course Description:

AGM 120 is an introductory course designed to acquaint students with a wide range of basic concepts, principles, procedures, and applications of engineering and machinery used in agriculture. Emphasis is on fundamental principles and application to agricultural operations.

Text and Materials:

No text is required. However, Agricultural Technical Systems and Mechanics by Koel, et al is an excellent reference (with a great content expert). You will need a calculator with capabilities for using exponents and trig functions. The calculator will be needed in most labs and many lectures and should, therefore, be brought to all lectures, labs, and exams. Cell phones will not be allowed for use on exams and lab quizzes.

Course Requirements:

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Points</th>
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<tbody>
<tr>
<td>Three one-hour exams</td>
<td>100 points each</td>
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<tr>
<td>Comprehensive final exam</td>
<td>100 points</td>
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<tr>
<td>Lab exercises</td>
<td>200 points</td>
</tr>
<tr>
<td>Lecture attendance and punctuality</td>
<td>100 points</td>
</tr>
<tr>
<td>Total</td>
<td>700 points</td>
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Grading Policy:

630 – 700 = A  
560 – 629 = B  
490 – 559 = C  
420 – 489 = D  
Below 420 = F
Course Calendar:

Lecture Schedule:

Course Introduction (1 day)
Measuring Distance (+/- 3 days)
Measuring Angles (+/- 2 days)
Measuring Areas (+/- 3 days)
Measuring Volumes (+/- 2 days)
Map Reading (+/- 3 days)
Drawing, Sketching and Reading Plans (+/- 1 day)
Exam I (1 day)
Exam Critique; Framing Systems (+/- 3 days)
Concrete and Masonry (+/- 3 days)
Insulation and Heat Flow (+/- 1 day)
Fasteners (+/- 1 day)
Roofing and Sheet Metal (+/- 1 day)
Plumbing (+/- 1 day)
Exam II (1 day)
Exam Critique (1/2 day)
Basic Electricity (+/- 1 day)
Series and Parallel Circuits (+/- 1 day)
Wire Selection (+/- 1 day)
Electric Motors (+/- 1 day)
Tractors (+/- 1 day)
Primary Tillage Equipment (+/- 1 day)
Secondary Tillage Equipment (+/- 1 day)
Planting Equipment (+/- 1 day)
Harvesting Equipment (+/- 1 day)
Exam III (1 day)
Exam critique (1/2 day)
Course Review (1/2 day)
Comprehensive Final Exam (1 day)
Lab Schedule:

Lab 1 Measuring Distance
Lab 2 Angles and Areas
Lab 3 Land Description
Lab 4 Differential and Profile Leveling
Lab 5 Insulation and Heat Flow
Lab 6 Selection of Structural Members
Lab 7 Principles of Electricity
Lab 8 Series and Parallel Circuits
Lab 9 Sizing Conductors
Lab 10 Electric Motors
Lab 11 Laying-out a Common Rafter
Lab 12 Equipment Efficiency and Capacity
Lab 13 Work, Power, Torque and Horsepower
Lab 14 Internal Combustion Engines
Lab 15 Tractors and Power Units

Student Conduct:

Students are expected to assist in maintaining a classroom environment which is conducive to learning. In order to assure that all students have an opportunity to gain from time spent in class, unless otherwise approved by the instructor, students are prohibited from using cellular phones or beepers, eating in class, making offensive remarks, reading newspapers, sleeping, or engaging in any other form of distraction. Inappropriate behavior in the classroom shall result in, minimally, a request to leave the classroom.

The use of all tobacco and vape products (included but not limited to cigarettes, cigars, pipes, smokeless tobacco, e-cigarettes, vaporizers, vape pens, hookahs, blunts, pipes, snuff, and all other tobacco or vape related products) is prohibited on all property that is owned, leased, occupied, or controlled by SFASU.
Attendance Policy:

Students are expected to attend all classes and labs. Over 15% of the class grade is determined by attendance and punctuality. 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 (A-9.1)

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. Please read the complete policy at http://www.sfasu.edu/policies/academic_integrity.asp
Acceptable Classroom Behavior

Classroom behavior should not interfere with the instructor’s ability to conduct the class or the ability of other students to learn from the instructional program (see Student Conduct Code, policy D-34.1). Unacceptable or disruptive 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. This prohibition applies to all instructional forums. The instructor shall have full discretion over what is appropriate/inappropriate in all instructional forums.

Students who do not attend classes regularly or who perform poorly may be referred to the SSC Campus Early Alerts program (http://www.sfasu.edu/judicial/earlyalert.asp). This program provides students with recommendations or other assistance that is available to help SFA students succeed.

Responsible Use of Technology

It is expected that all students will only use cell phones, PDAs, laptop or table computers, MPs players, and related devices outside of class time or when appropriate in class. Answering a cell phone, texting, listening to music, or using a laptop/tablet for matters unrelated to the course may be grounds for dismissal from class or other penalties. Recording lectures or labs is allowed only with permission.

Withheld Grades Semester Grades Policy (A-54)

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)

<table>
<thead>
<tr>
<th>Course</th>
<th>PLO 1 Technical</th>
<th>PLO 2 Problem Solving</th>
<th>PLO 3 Communication</th>
<th>PLO 4 Leadership</th>
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B-S. Agricultural Engineering Technology Program Learning Outcomes

<table>
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<tr>
<th>Proficiency Levels</th>
<th>B-Basic</th>
<th>I-Intermediate</th>
<th>A-Advanced</th>
<th>M-Mastery</th>
</tr>
</thead>
</table>

- B: Basic
- I: Intermediate
- A: Advanced
- M: Mastery
Student Learning Outcomes:

Determine distance using stepping, optical devices, taping and measuring wheel
Determine land slope
Determine angles; layout angles
Calculate acreage
Calculate board-feet measure and cost of materials
Calculate concrete volume and cost
Calculate volume of variously shaped containers and objects
Identify and cite characteristics, advantages and disadvantages of roof types
Identify common framing systems of structures
Calculate concrete beam weight
Determine cross-sectional area of reinforcing steel required for concrete beams and columns
Identify structural members
Compute R value of structural sub-assemblies
Identify common structural fasteners
Identify common roofing materials and cite advantages and disadvantages
Design cantilever and simple wooden beams
Design a pole type agricultural structure
Cite highlights of the evolution of tractors
Name multiple safety devices that have been incorporated into tractor design
Understand and communicate basic operating principles of internal combustion engines
Calculate power, displacement and compression ratio
Understand and communicate common methods of primary and secondary soil tillage and their characteristics, advantages and disadvantages