# AEGE 1413: FUNDAMENTALS OF AGRICULTURAL ENGINEERING

<table>
<thead>
<tr>
<th>Instructor Name:</th>
<th>Professor Ali Fares</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office Location:</td>
<td>Agricultural Research Building: Office # 125</td>
</tr>
<tr>
<td>Office Phone:</td>
<td>(936) 261-5095</td>
</tr>
<tr>
<td>Fax:</td>
<td>(936) 261-2548</td>
</tr>
<tr>
<td>Email Address:</td>
<td><a href="mailto:alfares@pvamu.edu">alfares@pvamu.edu</a></td>
</tr>
<tr>
<td>Mail (U.S. Postal Service) Address:</td>
<td>Prairie View A&amp;M University</td>
</tr>
<tr>
<td></td>
<td>P.O. Box 519</td>
</tr>
<tr>
<td></td>
<td>Mail Stop 2008</td>
</tr>
<tr>
<td></td>
<td>Prairie View, TX 77446</td>
</tr>
<tr>
<td>Office Hours:</td>
<td>Tue &amp; Thu: 4:00 PM - 5:30 PM.</td>
</tr>
<tr>
<td></td>
<td>Other times by appointment. Students are advised to make appointments with the professor ahead of time and be specific with the subject matter to be discussed. Students should also be prepared for their appointment by bringing all applicable materials and information to the professor.</td>
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<tr>
<td>Virtual Office Hours:</td>
<td>TBA</td>
</tr>
<tr>
<td>Course Location:</td>
<td>121 Ag. &amp; Bus. Building</td>
</tr>
<tr>
<td>Class Meeting Days &amp; Times:</td>
<td>TTH 6:00 – 7:20 PM</td>
</tr>
<tr>
<td>Course Abbreviation and Number:</td>
<td>AEGE 1413</td>
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<tr>
<td>Catalog Description:</td>
<td>Introduction to the major areas of applying engineering principles to solving problems in agriculture. Emphasis is placed on problem solving skills, farm workshop methods, tool identification, land measurement methods and skills. Will include introduction to elementary surveying.</td>
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<tr>
<td>Prerequisites:</td>
<td>Working knowledge of the number system and basic mathematics.</td>
</tr>
<tr>
<td>Co-requisites:</td>
<td>None</td>
</tr>
<tr>
<td>Required Text:</td>
<td>Introduction to Agricultural Engineering Technology: 4th Edition (H. L. Field • J. M. Long) or 3rd Edition (- H. L. Field; and J. B. Solie.)</td>
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<tr>
<td>References:</td>
<td>Engineering Applications in Agriculture</td>
</tr>
<tr>
<td></td>
<td>(- W. Bowers, B. A. Jones, Jr. and E. F. Olver.)</td>
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<tr>
<td>Access to Learning Resources:</td>
<td>PVAMU Library:</td>
</tr>
<tr>
<td></td>
<td>phone: (936) 261-1500;</td>
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<tr>
<td></td>
<td>web: <a href="http://www.tamu.edu/pvamu/library/">http://www.tamu.edu/pvamu/library/</a></td>
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<tr>
<td></td>
<td>University Bookstore:</td>
</tr>
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<td></td>
<td>phone: (936) 261-1990;</td>
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<tr>
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<td>web: <a href="https://www.bkstr.com/Home/10001-10734-1?demoKey=d">https://www.bkstr.com/Home/10001-10734-1?demoKey=d</a></td>
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### Course Goals or Overview:

At the end of the course, students should be able to solve problems utilizing the basic concepts of agricultural engineering in the following broad areas:

- i) Agriculture in the digital age
- ii) Basic Problem Solving Skills
- iii) Elementary Surveying/Basic Soil and Water considerations;
- iv) Basic Shop Skills including Shop Safety;
- v) Farm Structures and Environment;
- vi) Farm Power and Machinery;
- vii) Economic Aspects of Agricultural Engineering.

### Course Objectives/Accrediting Body Learning Outcomes:

**KR 4.2.a:** Expected Learning Outcome: Students are able to apply basic problem-solving techniques to agricultural problems and issues.

**KR 4.2.b:** Expected Learning Outcome: Students are able to develop outcome measures, use informatics principles and technology to collect and analyze data for assessment, and evaluate data to use in decision-making.

**SK5.1c:** Expected Learning Outcome: Students are able to understand and explain the principles of agricultural mechanics and farm mechanization

### At the end of this course, the student will

<table>
<thead>
<tr>
<th></th>
<th>Alignment with Academic Program</th>
<th>Alignment with Core Curriculum</th>
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<tbody>
<tr>
<td>1</td>
<td>Have a basic knowledge of the standard form of estimating answers. Basic problem-solving skills.</td>
<td>Program Core</td>
</tr>
<tr>
<td>2</td>
<td>Understand the concepts of land measurements, including surveying.</td>
<td>Program Core</td>
</tr>
<tr>
<td>3</td>
<td>Know about farm water systems.</td>
<td>Program Core</td>
</tr>
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<td>4</td>
<td>Understand concepts of Work, Power, Horsepower and torque</td>
<td>Program Core</td>
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<td>5</td>
<td>Understand Internal Combustion engines and Power applications.</td>
<td>Program Core</td>
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<tr>
<td>6</td>
<td>Have basic knowledge of Economic considerations in agricultural engineering.</td>
<td>Program Core</td>
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**Code Key:**
- T = Taught
- R = Reinforced
- I = Integrated
<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Reading 4th Edition</th>
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<tbody>
<tr>
<td>Jan 13</td>
<td>Digital Agriculture &amp; Water Cycle</td>
<td>Chap. 16</td>
</tr>
<tr>
<td>Jan 20</td>
<td>Precipitation &amp; Runoff</td>
<td>Chap. 16 &amp; Chap. 17</td>
</tr>
<tr>
<td>Jan 27</td>
<td>Erosion</td>
<td>Chap. 18</td>
</tr>
<tr>
<td>Feb 3</td>
<td>Irrigation</td>
<td>Chap. 19</td>
</tr>
<tr>
<td>Feb 10</td>
<td>Test 1 &amp; Measuring Distance, Angle &amp; Areas</td>
<td>Chap. 12 &amp; 13</td>
</tr>
<tr>
<td>Feb 17</td>
<td>Site-Specific Crop Management</td>
<td>Chap. 29</td>
</tr>
<tr>
<td>Feb 24</td>
<td>Machineray</td>
<td>Chap. 7 &amp; 28</td>
</tr>
<tr>
<td>Mar 2</td>
<td>Mid-term &amp; Animal Waste Management</td>
<td>Chap. 21</td>
</tr>
<tr>
<td>Mar 9</td>
<td><strong>Spring Break</strong></td>
<td></td>
</tr>
<tr>
<td>Mar 16</td>
<td>Drones, UAVs</td>
<td>Will Be Provided.</td>
</tr>
<tr>
<td>Mar 23</td>
<td>Storage &amp; Handling</td>
<td>Chap. 20</td>
</tr>
<tr>
<td>Mar 30</td>
<td>Machinery Calibration</td>
<td>Chap. 8</td>
</tr>
<tr>
<td>Apr 6</td>
<td>Surveying</td>
<td>Chap. 14 &amp; 15</td>
</tr>
<tr>
<td>Apr 13</td>
<td>Econ. of Ag. Mach. &amp; Test 2</td>
<td>Chap. 10</td>
</tr>
<tr>
<td>Apr 20</td>
<td>Enviroment Control &amp; Project Presentations</td>
<td>Chap. 22 &amp; 23</td>
</tr>
<tr>
<td>Apr 27</td>
<td>Project Presentations</td>
<td>Your Presentation</td>
</tr>
<tr>
<td>Apr 29-May 6</td>
<td>Final Exams</td>
<td></td>
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</table>

**Course Grading Procedures and Evaluation:**

- Two Tests: 15%
- Pop Quizzes (Several): 10%
- Mid-Term Examination: 20%
- HW Assignments: 25%
- Final Examination: 15%
- Project: 15%

**Total possible points: 100%**

(Bonus: Attendance & Participation. **10% extra points!**)

**Grade**

- **A**: 90 – 100%
- **B**: 80 - 89%
- **C**: 70 - 79%
- **D**: 60 - 69%
- **F**: 0 - 59%

**Submission of Assignments:**

Assignments are expected to be submitted on time.
Formatting Documents:
Microsoft Word is the standard word processing tool used at PVAMU. If you are using other word processors, be sure to use the “save as” tool and save the document in either the Microsoft Word, Rich-Text, or plain text format.

Exercises – written assignments designed to supplement and reinforce course material
Class Attendance – daily attendance is required, and absenteeism is strongly discouraged. VII. ATTENDANCE AND PARTICIPATION POLICY
Prairie View A&M University requires regular class attendance. Attending all classes supports the full academic development of each learner whether classes are taught with the instructor physically present or via distance learning technologies such as interactive video. Excessive absenteeism, whether excused or unexcused, may result in a student’s course grade being reduced or in the assignment of a grade of “F.” Absences are accumulated beginning with the first day of class during the semester. The university’s attendance policy is provided below.

Excused Absences
Absences due to illness, attendance at university-approved activities, and family or other emergencies constitute excused absences and must be supported by documentation presented to the instructor before or immediately upon the student’s return to class. Students are always responsible for all oral and written examinations as well as all assignments (e.g., projects, papers, reports).

Excessive Absences
Accumulation of one week of unexcused absences (for the number of clock hours equivalent to the credit for the course) constitutes excessive absenteeism. The instructor is not required to accept assignments as part of the course requirement when the student’s absence is unexcused.

Absences on Religious Holy Days
In accordance with Texas Education Code, Section 51.925, subchapter (Z), a student may be absent from classes for the observance of a religious holy day and will be permitted to take missed examinations, and complete missed assignments provided the student has notified the instructor of the planned absence in writing and receipt of the notice has been acknowledged by the instructor in writing. “A religious holy day means a holy day observed by a religion whose place of worship is exempt from property taxation under the Texas Tax Code, Section 11.20.”

Exam Policy
Written tests designed to measure knowledge of presented course material
Exams should be taken as scheduled. No makeup examinations will be allowed except under documented emergencies (See Student Handbook).

University Rules and Procedures

Disability statement (See Student Handbook):
Students with disabilities, including learning disabilities, who wish to request accommodations in class should register with the Services for Students with Disabilities (SSD) early in the semester so that appropriate arrangements may be made. In accordance with federal laws, a student requesting special accommodations must provide documentation of their disability to the SSD
Academic misconduct (See Student Handbook):

You are expected to practice academic honesty in every aspect of this course and all other courses. Make sure you are familiar with your Student Handbook, especially the section on academic misconduct. Students who engage in academic misconduct are subject to university disciplinary procedures.

Forms of academic dishonesty:
1. Cheating: deception in which a student misrepresents that he/she has mastered information on an academic exercise that he/she has not mastered, giving or receiving aid unauthorized by the instructor on assignments or examinations.
2. Academic misconduct: tampering with grades or taking part in obtaining or distributing any part of a scheduled test.
3. Fabrication: use of invented information or falsified research.
4. Plagiarism: unacknowledged quotation and/or paraphrase of someone else’s words, ideas, or data as one’s own in work submitted for credit. Failure to identify information or essays from the Internet and submitting them as one’s own work also constitutes plagiarism.

Nonacademic misconduct (See Student Handbook)
The university respects the rights of instructors to teach and students to learn. Maintenance of these rights requires campus conditions that do not impede their exercise. Campus behavior that interferes with either (1) the instructor’s ability to conduct the class, (2) the inability of other students to profit from the instructional program, or (3) campus behavior that interferes with the rights of others will not be tolerated. An individual engaging in such disruptive behavior may be subject to disciplinary action. Such incidents will be adjudicated by the Dean of Students under nonacademic procedures.

Sexual misconduct (See Student Handbook):
Sexual harassment of students and employers at Prairie View A&M University is unacceptable and will not be tolerated. Any member of the university community violating this policy will be subject to disciplinary action.

Attendance Policy:
Prairie View A&M University requires regular class attendance. Excessive absences will result in lowered grades. Excessive absenteeism, whether excused or unexcused, may result in a student’s course grade being reduced or in assignment of a grade of “F.” Absences are accumulated beginning with the first day of class.

Student Academic Appeals Process
Authority and responsibility for assigning grades to students rests with the faculty. However, in those instances where students believe that miscommunication, errors, or unfairness of any kind may have adversely affected the instructor’s assessment of their academic performance, the student has a right to appeal by the procedure listed in the Undergraduate Catalog and by doing so within thirty days of receiving the grade or experiencing any other problematic academic event that prompted the complaint.

Generally, student complaints about grades or other class-related performance assessments can be addressed by the instructor of record and the student. The student must put in writing the nature of the complaint before meeting with the instructor of record, preferably during his/her office hours, to present the grievance and any supporting documentation that the grade or outcome of a class-related concern should have been different. (Note: This document will provide

Refused for any further actions of the student and instructor cannot contact
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consideration by the Program Director for Architecture or the Dean for the School of Architecture
will be given without the student having presented their grievance in writing to include the reasons
for the appeal and the specific remedy sought to the matter.) When that cannot be achieved, the
student may have his/her complaint addressed by the procedure outlined in the PVAMU
Undergraduate Catalog. Faculty, other classroom professionals, and students’ rights are to be
protected and their human dignity respected. Grading and other class related complaints are to be
filed in writing initially within thirty days following the alleged precipitating action on which the
complaint is based. Except where extenuating circumstances render it unreasonable, the outcome
of a complaint that reaches the level of department/division head (i.e., Dean of Architecture) will be
reviewed within thirty days, and a written notification of outcome will be provided to the student.
Where a complaint must be reviewed at each level, the entire process should be completed within
ninety days of receipt of the complaint.

ADA STATEMENT
Students with disabilities who believe they may need special assistance for this class are
couraged to contact the Office of Disabilities Services at (936) 857-2693/2694 as soon as
possible. Once you receive a letter of adjustment from the office, kindly make an appointment
with me to discuss appropriate adjustments for this class.

ACADEMIC HONESTY POLICY
Prairie View A&M University is dedicated to a high standard of academic integrity among its
faculty and students. In becoming part of the Prairie View A&M University academic community,
students are responsible for honesty and independent effort. Disciplinary action will be taken
against any student who alone or with others, engages in any act of fraud or deceit. Scholastic
dishonesty will not be tolerated and will be pursued to the fullest extent allowed by university
regulation. I support the university's policies on sexual harassment and equal opportunity for all
people. You should acquaint yourself with your protections and responsibilities under these
policies.

Academic freedom is the privilege to discuss and debate with discretion any subject matter
directly related to the curricula during a scheduled period of instruction. This is a precious
freedom that must be guarded. Each of us must temper our comments with good judgment to
avoid remarks that might be harmful to others or might be construed as being irresponsible.
Discretion and common courtesy are to be your guidelines in this regard.

UNIVERSITY POLICY on ACADEMIC HONESTY
Course credit, degrees, and certificates are to be earned by students and may not be obtained
through acts of dishonesty. Students are prohibited from participation in acts of academic
dishonesty, including tampering with records or falsifying admissions or other information.
Disciplinary action will be taken against any student who alone or with others, engages in any act
of academic fraud or deceit. The university's policy on academic dishonesty is stated below:

"It is the responsibility of students and faculty members to maintain academic integrity at the
university by refusing to participate in or tolerate academic dishonesty. Each instance of
academic dishonesty should be reported to the department in which the student has declared a
major so that it can become a part of the student’s file; to the department head of the instructor of
the course in which the alleged infraction occurred; and to the Office, for Academic Affairs as
deemed necessary."

Offenses and DISCIPLINARY ACTIONS
Offences:

Acquiring Information
Providing Information
Plagiarism and Dual Submissions
Conspiracy
Fabrication of Information
Misrepresentations, alterations of documents, forgery, et cetera
Disciplinary Actions:
Grade Penalty
Letter of Reprimand
Probation
Suspension
Dismissal
Expulsion

1. During regular class periods, all students are expected to dress appropriately in accordance with university regulations so that no disruptions in the learning experience will occur.
2. No hats or caps will be allowed to be worn in the classroom during class sessions.
3. No food or drinks is allowed in the classroom at any time.
4. Cellular telephones are to be turned off or put on silent ring tone during the class period. No “earphone” units will be allowed. If your cell phone rings during the lecture, you are subject to losing all participation point for that class period.
5. Laptops must emit no noise. Make sure your laptop is warmed up and your battery charged before class starts. Checking email, playing games, messaging, and other non-class-related activities are not allowed.
6. Harassment of your fellow students of any kind will not be tolerated.
7. No children, friends, family members, or guests are allowed in the class without prior approval. Failure to adhere to this rule will result in a “0” for that class period.

CONDUCT OF THE CLASS
Please note the following rules for the conduct of the class.

1. The class will begin at the appointed time.
2. The class is dismissed when so indicated by the instructor. Leaving the classroom before the class is dismissed without prior approval from the instructor will result in a loss of participation for that class.
3. All class members are required to keep the classroom in a clean and orderly manner to facilitate the number of students using it each day. Failure to maintain the classroom as requested by the instructor will result in a deduction in participation points for all class members for that date of instruction.

Please refer to the PVAMU Undergraduate Catalog for a full description.

PERSONAL CONDUCT
Students and faculty are expected to conduct themselves in ways that support individual learning and the learning of others. To that end, members of the classroom community will conduct themselves in a professional and ethical manner to achieve these objectives. Any conduct construed to interfere with the learning opportunities of members of the class may result in the removal of the student from the class for that day. Repeated inappropriate conduct will result in permanent removal from the class.

Based upon the fact that we are trying to prepare you for professional employment, we will expect you to adhere to these guidelines.
STATEMENT OF AGREEMENT

I have read the Course Syllabus for AGEG 1413 for the Spring Semester 2020, including the Class Lecture and Event Schedule, and agree to abide by the conditions for the class as spelled out in this document. My signature indicates my commitment to meeting the course objectives and succeeding in this educational endeavor.

____________________________________________________________________________

Signature

______________________________  ________________  ______________
Student name (Please print neatly)  Student ID #  Date

RETURN THIS PAGE FROM THE SYLLABUS TO THE INSTRUCTOR TO COMPLETE YOUR ENROLLMENT IN THIS COURSE.

RECEIVED WITH STUDENT’S SIGNATURE ENTERED INTO GRADE BOOK: