AGM 315
AGRICULTURAL ELECTRIFICATION
FALL 2018

Name: Dr. Craig Morton

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

Phone: (936) 468-4250

Office: Agricultural Engineering Technology building

Office Hours:

Monday
none
Tuesday
9:00–12:00
Wednesday
11:00–2:00
1:00–2:00
4:00–5:00
Thursday
none
Friday
9:00–12:00
1:00-2:00

Department: Agriculture

Class meeting time and place: MW 10:00 to 10:50 in AET building, room 110; lab M 1:00 – 2:50 in AET building, electricity/small engines lab

Course Objective: The course objective is to teach students a wide range of basic concepts, principles, and applications of agricultural electrification and wiring skills.
Text and Materials:

Practical Electrical Wiring: Residential, Farm, Commercial, Industrial. 22nd ed. Frederic P. Hartwell and Herbert T. Richter (several under $10 used to $54.20 new).

Calculators will be required in some lectures and labs. It is a good policy to routinely bring a calculator to all lectures, labs, and exams. Cell phones will not be allowed for exams.

Other Resources:

National Electrical Code 2016 by National Fire Protection Association ($98 new)
Wiring Simplified 45th ed., Hartwell, Richter, and Schwan, (Based on the 2017 National Electrical Code) ($16 new)

Course Requirements:

Three exams 300 points
Lab 150 points
Attendance & punctuality 100 points
550 points

Grading Policy:

495 – 550 points = A
440 – 494 points = B
385 – 439 points = C
330 – 384 points = D
0 – 329 points = F
Course Calendar:

Course introduction (1 day)
National Electric Code, Product Standards and Inspection (+/- 1 day)
Numbers, Measurements and Electricity (+/- 1 day)
AC and DC; Power Factor; Transformers (+/- 2 days)
Basic Devices and Equipment (+/- 2 days)
Exam I (1 day)
Exam critique; Overcurrent Devices (+/- 2 day)
Selecting Conductors (+/- 2 days)
Making Wire Connections and Splices (+/- 1 day)
Grounding for Safety (+/- 2 days)
Outlet and Switch Boxes (+/- 2 day)
Exam II (1 day)
Exam critique; Wiring Methods (+/- 2 days)
Residential and Farm Motors (+/- 1 day)
Installing Service Entrances and Grounds (+/- 2 days)
Farm Wiring (+/- 2 days)
On-site Engine Generation and Supply of Premises Wiring (+/- 1 day)
Exam III (1 day)

Student Conduct:

**Responsible Use of Technology:** It is expected that all students will only use cell phones, PDAs, laptop computers, MP3 players and other technology 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.

**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.
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 product) is prohibited on all property that is owned, leased, occupied, or controlled by SFASU. Believe it or not, this even applies to the agriculture shop.

**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 (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.
You may read the complete policy at
http://www.sfasu.edu/policies/academic_integrity.asp

**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)

B.S. Agricultural Machinery Program Learning Outcomes

<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>
</tr>
</thead>
<tbody>
<tr>
<td>AGR 100</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td>AGN 110</td>
<td>I</td>
<td>I</td>
<td>B</td>
<td>I</td>
</tr>
<tr>
<td>AGM 120</td>
<td>I</td>
<td>A</td>
<td>I</td>
<td>I</td>
</tr>
<tr>
<td>PLS 317</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
</tr>
<tr>
<td>AGN 331</td>
<td>M</td>
<td>M</td>
<td>I</td>
<td>I</td>
</tr>
<tr>
<td>AGD 400</td>
<td>I</td>
<td>I</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>AEC 451</td>
<td>A</td>
<td>A</td>
<td>I</td>
<td>I</td>
</tr>
<tr>
<td>AGD 361/371</td>
<td>A/I</td>
<td>A/I</td>
<td>A/A</td>
<td>A/M</td>
</tr>
<tr>
<td>AGN 462/367/445</td>
<td>A</td>
<td>I</td>
<td>I</td>
<td>I</td>
</tr>
<tr>
<td>AGM 236</td>
<td>A</td>
<td>I</td>
<td>I</td>
<td>B</td>
</tr>
<tr>
<td>AGM 310</td>
<td>M</td>
<td>A</td>
<td>I</td>
<td>B</td>
</tr>
<tr>
<td>AGM 325</td>
<td>A</td>
<td>A</td>
<td>I</td>
<td>B</td>
</tr>
<tr>
<td>AGM 383</td>
<td>M</td>
<td>A</td>
<td>B</td>
<td>I</td>
</tr>
<tr>
<td>AGM 410</td>
<td>M</td>
<td>M</td>
<td>M</td>
<td>M</td>
</tr>
<tr>
<td>PLS 420</td>
<td>A</td>
<td>A</td>
<td>I</td>
<td>I</td>
</tr>
<tr>
<td>AGM 421</td>
<td>A</td>
<td>A</td>
<td>I</td>
<td>I</td>
</tr>
<tr>
<td>AGM 425</td>
<td>M</td>
<td>M</td>
<td>B</td>
<td>I</td>
</tr>
<tr>
<td>AGM 315/326</td>
<td>M</td>
<td>M</td>
<td>I</td>
<td>B</td>
</tr>
</tbody>
</table>

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

Solve problems using Ohm’s Law  
Solve problems using the power formula  
Solve problems using the power factor formula  
Calculate cost of power use  
Calculate resistance in a parallel circuit  
Calculate resistance in a series circuit  
Calculate transformer output voltage  
Proper size conductors  
Choose appropriate conductor types  
Calculate voltage drop in a conductor  
Demonstrate proper techniques to install electrical devices  
Demonstrate knowledge of proper solderless connectors  
Identify wiring color codes  
List places where GFCIs are required  
Wire a circuit such that a load is controlled from three locations  
Wire a circuit such that two loads are switched from two locations  
Wire a circuit such that a load is switched, a GFCI duplex outlet is always hot and a GFCI duplex outlet is switched  
Wire a circuit such that one duplex outlet is always hot and a device with both a switch and an outlet is wired so that the single outlet is always hot and the switch controls a load  
Wire a circuit such that two lights are switched from a single location and a duplex outlet is always hot  
Wire a circuit such that a load is switched from a single location and a duplex outlet is always hot