



Georgia FFA Association

AGRICULTURAL ELECTRIFICATION CDE

I. OVERVIEW

The Agricultural Electrification (EMC) Career Development Event is an activity which provides opportunities for FFA members to demonstrate their skills in electrical wiring, critical thinking, and communications. The Electric Membership Corporations throughout Georgia sponsor these activities as a means of promoting education in the safe, efficient use of electrical energy.

II. PURPOSE

The overall objective of the Agricultural Electrification (EMC) Career Development Event is to promote and expand educational programs in electrification for students enrolled in agricultural education. To achieve this objective, the CDE reinforces the classroom instruction and FFA supervised activity projects in three (3) stages consisting of a problem-solving exercise, practical wiring exercise, and an oral demonstration.

III. ELIGIBILITY

This event is open to students in grades 9-12 who are agricultural education students, and are paid members of a chartered FFA chapter. Each student's name must appear on the chapter's FFA roster at least 10 days prior to competition above the chapter level.

Chapters are limited to one (1) CDE contestant per chapter. The top two (2) individuals in the area CDE's may participate in the state CDE during the same year. *A contestant in the State Agricultural Electrification CDE placing 1st may not participate in this CDE again.*

IV. SPECIAL NEEDS REQUEST

To report any special needs or request special services for a student to compete in a Career Development Event or FFA Award area (Area or State level), it is the responsibility of the FFA advisor to provide a detailed and specific request and explanation in writing. Requests should include written documentation from the school system verifying the IEP and need being requested. Written requests must be submitted to the CDE Superintendent prior to registering for the CDE/event (at least 3 weeks prior to the date of competition.)

V. RULES

Presentation/Demonstration: (10 points or 10%) Each CDE contestant will use effective communications skills in describing actual electrical wiring tasks. All participants will use the same topic. Materials, props, etc. will be provided. CDE contestants are encouraged to fully explain all necessary steps in performing the required electrical tasks. Presentations should be between 4 and 6 minutes. Points will be deducted from contestant's scores for presentations under 4 minutes and over 6 minutes. A panel of judges will score each CDE contestant on this phase of the CDE and will arrive at an average score of 1 – 10 points. These points will be included in the CDE contestant's total overall score. No written speeches will be allowed. Notes (an outline of main points or bulleted references) may be made on paper or note cards that measure 3" x 5" or less.

Problem-Solving: (30 points or 30%) Each CDE contestant will have 45 minutes to complete a 30-item problem-solving activity. Each item will be a multiple-choice question relative to actual wiring practices, requirements of the National Electrical Code, and/or knowledge of rural electrification and electric cooperatives. Reference materials, which may be helpful in solving problems, will be available for use by the CDE contestant. No reference materials will be available for the rural electrification and electric cooperatives problem-solving questions. Each problem-solving item will count one point toward each CDE contestant's total score.



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Wiring Problem: (60 points or 60%) Each CDE contestant will complete an assigned wiring problem. Judging will be based on the current National Electrical Code. The problem will be scored (60 points maximum) on workability of assigned problem, safety, efficiency in use of materials, time required to complete the problem, and neatness. Wiring materials will be provided. Wiring problems could be 120 v 15 and/or 20 amp branch circuits, and/or 240 v 20 amp branch circuits.

Each CDE contestant must furnish his/her own tools. Cordless drills and cordless screwdrivers may be used to install device boxes and service entrance strap. Cordless screwdriver 4.0 volts or less may be used to tighten conductors to device screws, devices to device box, and device coverplates to the device, **cordless drills may not be used beyond the installation of device boxes to the wiring frame and installing the service entrance strap.** No type of razor-cutting devices may be used.

Incomplete Wiring Problem

An incomplete wiring problem is the result of a contestant calling “Time” before the 90 minute cutoff in order to receive time credit. Even though the problem may work correctly as assigned, the contestant has not met the following criteria for a complete problem:

- a. Secured branch circuit cables to the frame with a minimum of five (5) staples.
- b. Attached all devices to boxes.
- c. Installed all cover plates.
- d. Installed the Service Entrance cable into the Service Entrance Panel through the cable connector and secured the service entrance cable to the wiring frame with a service strap.
- e. Installed the equipment grounding conductor and secured it with a minimum of one staple.
- f. Install the bonding screw in the service entrance panel.

The problem is considered to be incomplete if the above criteria have not been met and the points that the contestant would have earned on time will be reduced to zero “0”.

VI. EVENT FORMAT

Individual students of FFA Chapters in grades 9 – 12 compete in one of six area Career Development Events with the top two (2) winners from each area participating in a final state CDE. The CDE contestants demonstrate skills in three (3) areas. The skills encompass the following:

1. A problem-solving exercise that examines the student’s knowledge of electric cooperative operation and history, electrical facts and knowledge, National Electric Code Book (NEC) usage, wiring circuit schematic interpretation, and circuit planning skills.
2. A practical wiring exercise of a specific electrical circuit that requires the CDE contestant to read a schematic, then plan and actually wire the circuit. This exercise provides a means to examine correct planning and wiring methods, efficiency and safety considerations in wiring.
3. An oral demonstration/presentation to strengthen leadership skills and abilities to communicate. Use an assigned topic concerning some component of an electrical system.

VII. SCORING

Scoring for Agricultural Electrification (Georgia Electric Membership Corporation) career development will consist of three parts: speech/demonstration activity (10% of the total score), problem-solving activity (30% of the total score), and wiring problem (60% of the total score).



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VIII. TIE BREAKERS

In the event of a tie, the winners will be determined as follows: first, the CDE contestant with the highest wiring score, second the CDE contestant with the highest problem-solving place score, and third the CDE contestant with the highest speech/demonstration place score.

IX. AWARDS

Awards shall be determined each year by the Board of Trustees of the Georgia FFA Foundation.

X. REFERENCES

- National Fire Protection Assn. – “National Electrical Code” – Current Edition
- The American Association for Vocational Instructional Materials (AAVIM) – “Electrical Wiring” – Current Edition
- The American Association for Vocational Instructional Materials (AAVIM) – “Understanding Electricity” – Current Edition
- The American Association for Vocational Instructional Materials (AAVIM) – “Electrical Controls” – Current Edition
- The American Association for Vocational Instructional Materials (AAVIM) – “How Electric Motors Start & Run” – Current Edition
- National Food and Energy Council – “Agricultural Wiring Handbook” – Current Edition
- Georgia Electric Membership Corporations – “History of Georgia’s Electric Membership Corporations” – Current Edition
- Georgia Electric Membership Corporations – “History of EMC CDE ” – Current Edition
- The American Association for Vocational Instructional materials (AAVIM) “Basics of Electric Motors” – Current Edition