

**2009 South Carolina  
State FFA Agricultural Mechanics Contest  
9:00 am, Saturday May 9, 2009  
Laurens High School-Career Areas**

**This year's state contest will include:**

- 1. 1 hour written examination**
- 2. 1 hour team problem solving activity (3-4 members)**
- 3. 1 hour(3-20 minute sections) individual skill performances and/or written problems**

**Portions of this contest may be conducted outdoors rain or shine. All contestants must arrive at Laurens High School by 8:50 a.m. dressed appropriately for the weather and to provide adequate safety while performing skill exercises (no shorts or open toed shoes). Students MUST provide their own eye safety protection. All students must wear safety glasses during the skill activities. To enter the CDE area, students must have safety glasses in their possession. The use of clipboards and pocket calculators is permissible and encouraged.**

**Your team should be comprised of three or four individuals that have prepared to represent your chapter for the state event. Be sure 2008-2009 FFA dues have been paid on your contestants. Also review the skills portion of this event as outlined below and make sure your contestants can safely participate in these activities. Please do not place your students into potentially hazardous and embarrassing situations if they are unprepared.**

**Please register NO LATER than May 7th if you plan to compete in this year's state event. No exceptions.**

## 2009 Event Theme-

### “Plant Production SYSTEMS ”

The 2009 South Carolina State Agricultural Mechanics Career Development Event will be developed from the following subject matter described under the five systems areas listed below.

- **Machinery & Equipment Systems-** repair, maintenance, processing, materials handling, adjustments. *The Machine Systems Skill activity will be looking at the Irrigation installation either in a landscape or in a greenhouse, the students will need to be able to calculate what is needed with what is given and requested.*
- **Marketing/Information Systems-** customer relations, accounting, communication, economics, safety, service calls, reading and understanding labels *The activity will involve problem solving and calculations. A calculator is recommended.*

*The activity will involve skills commonly used to choose, assemble, or repair irrigation systems. The focus will be on **electrical, PVC, and/or valve systems commonly found used for water control.** Contestants should be able to use specification sheets, common tables (ex. wire size), and parts and repair manuals. The activity may involve reading a plan with common symbols, creating repair orders, parts lists, repair cost estimates, maintenance schedules, and/or determine component specifications. Skill area will not require any specific knowledge of the specific equipment used, but rather focus on the process.*

*Some examples might be (but activity will not be limited to):*

*Determine the power requirement of an electric motor given the specification sheet.*

*Determine the minimum wire size for a control circuit.*

*Determine the appropriate circuit for a common control valve given the specifications and wiring diagram.*

*Determine the proper part number for the control valve on a solenoid valve.*

*Determine which electric motor to order given basic specifications for a cool cell.*

*Determine the cost of components for a project given a parts list.*

*Choose the correct model number given specifications.*

- **Energy Systems-** *The problem solving/skills in the **Energy Systems** will involve the operation, installation, maintenance, and/or repair of 120/ 240 volt Single Phase Alternating Current Electrical Systems, Electric Motors and Controls and/or electrical equipment associated with “Thermostats” and **Plant Production Systems.***

- **Structural Systems-** storage, handling, disposal, concrete, plumbing, structural material selection, heating, ventilation, and “gas cutting”. *Contestants must bring a cutting shield or cutting glasses and leather welding gloves and they must wear appropriate clothing and footwear for cutting.*
- **Environmental/Natural Resource Systems-** water quality, material compatibility, soil and water conservation, disposal of waste

**WRITTEN EXAMINATION-** Question for the written examination may come from any or all of those five areas listed above.

**TEAM EVENT-** The one hour team event may include problem solving activities related to the above five systems that can be completed by a team effort. A comprehensive problem scenario may also be a portion of the team event. A laptop computer will NOT be needed. “Sprinkler Layout”

**INDIVIDUAL SKILLS-** The individual skills may include contestants to read instructions and material, select materials, measure, cut, layout, and fabricate an object from “copper or pvc pipe”.