

**2008 South Carolina
State FFA Agricultural Mechanics Contest
9:00 am, Saturday May 10, 2008
Laurens High School-Career Areas**

This year's state contest will include:

- 1. 45 minute written examination**
- 2. 1 hour team problem solving activity (3-4 members)**
- 3. 1 hour 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 2007-2008 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.

2008 Event Theme-

“PROCESSING SYSTEMS”

The 2008 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 harvesting/processing of bio-materials as an alternative fuel source. The skill activity might include the selection, sizing, adjusting, maintenance, etc., of a round baler. The exact model is not currently known. We are hoping to use a*

round baler with rotary feeder/cutters, capable of making 4' width x 5' diameter bales.

The skill activities will be as generic and any specific information required for the skill activity will be provided at the event

- **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 processing systems equipment. The focus will be on **electric, hydraulic, and/or pneumatic systems commonly found used for process 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 size air supply for a pneumatic cylinder from specifications.

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 coil on a solenoid valve.

Determine which electric motor to order given basic specifications.

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

Determine dimensions of a hydraulic cylinder or displacement of a hydraulic motor. 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 **Processing Systems**.*
- **Structural Systems-** *storage, handling, disposal, concrete, plumbing, structural material selection, heating, ventilation, air conditioning, and arc welding with a 7014 rod. Contestants must bring a serviceable welding helmet and leather welding gloves and they must wear appropriate clothing and footwear for welding.*

- **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.

INDIVIDUAL SKILLS- The individual skills may include contestants to read instructions and material, select materials, measure, cut, layout, and fabricate an object from lumber or plywood.