

# Robotics and Automation Technology

**Purpose:** To evaluate each contestant's preparation for employment in the emerging arena of robotics and automation with emphasis on the team approach to problem-solving in a work environment. To recognize outstanding performance in the use of new work styles and technology by contestants.

**Clothing:** Acceptable work clothes, safety glasses with side shields or goggles. (Prescription glasses can be used only if they are equipped with side shields. If not, they must be covered with goggles.) No school names may be displayed on any apparel.

**Contestants:** 1 team (2 persons) from each school that has registered for this contest on regional registration form

**The technical committee will provide robots, laptops, and control software this year.**

## **Tools/Equipment to be provided by each team:**

Multi-meter with leads

Wire stripper (electronic)

Long nose pliers (electronic)

Small screwdriver set (common and Phillips)

Diagonal pliers (side cutters)

Power strip with 6 outlets, must be circuit breaker protected

25 foot UL approved extension cord

100 feet hookup wire (20-24 AWG)

Tape, masking and electrical

Jumper leads for troubleshooting

2 #2 pencils (sharpened)

12" ruler

10-30 volt DC power supply

Small air compressor capable of 50psi with adapter for 6mm OD tubing

Light Stack -Red/Yellow/Green

Terminal Strips

Additional contest information may be supplied to supervisors of state competitors.

We will use the ER2U robot this year. It has the same control software, control box, and software used with the ER4U robot. The ER4U is used at the national event. For those teams who are not familiar with the Scorebase software we have setup the following for you:

1. You will have access to curriculum and simulation software until the end of April through a web based program. This will allow you to get familiar with the robot and how to right programs for a specific task.
2. We will also send you the pdf of the control box itself for you to review
3. We will have an area setup for teams to familiarize themselves with the robot on Friday April 23<sup>rd</sup> from 1pm to 4pm.

# **ROBOTICS & AUTOMATION TECHNOLOGY**

## **In addition to the above Tools/Equipment to be provided by each team:**

The Robotics and Automation Technology contest is a work intensive and time-consuming contest. The 4 hours allotted for this contest is at a minimum adequate. Therefore, it is necessary to be ready to start the contest on time. The contest time is 8:00 am - 12:00 noon on Saturday, April 24, 2010.

In view of the complexity and length of this contest, it is required that your equipment be set up and checked out before the contest starts. You and your instructor may enter the contest area any time Friday, April 23rd for the purpose of setting up your equipment and insuring its serviceability. Once you have insured your equipment is working, you may leave the contest area. You must return by 8:00 am Saturday, April 24th to check in for the contest.

All wiring will now take place during the contest.

Devices supplied by the technical committee will not be disassembled or opened for any reason unless explicitly directed to do so by a contest official. Disqualification will result if this is not adhered to.

If you have questions, feel free to call DEPCO at 1-800-767-1062 or Rob Smith at 1-417-850-3406.

### **Scope of the Contest**

The contest will be judged based on the criteria established in the 2010 SkillsUSA Championships Technical Standards.