

**SKILLSUSA**  
**ROBOTICS AND AUTOMATION TECHNOLOGY**  
**GEORGIA COMPETITION UPDATE**

In order to provide the maximum accessibility to all teams who wish to participate in the Robotics and Automation Technology competition, this year, schools will provide their own robot. The competition committee and competition sponsors will provide all peripheral components, such as sensors, conveyors, start/stop buttons, etc.

This allows each team to use the robot and programming language with which they are most familiar.

Each team will be provided with a work piece, a specified set of peripheral components, and a set of documents specifying a design and programming challenge. The team will then design, install, and program the robot work cell to perform the specified task.

**ROBOT**

- Teams will need to bring their own robot and programming laptop.
- The robot must be a six-axis robotic arm.
- The robot must have a gripper attachment (end effector) capable of grasping a cube or cylinder work piece that measures approximately 2" in all dimensions.
- The robot must possess the capabilities to connect via hardware (wiring) and software (input/output signals)
- Robot controller Input/output signal capabilities should range from 0-24 VDC.
- Teams must provide a way to secure the robot during operation, such as bolting to a piece of plywood, or a base of extruded aluminum.
  - Robot will be placed on folding tables!
- Teams will need to bring any additional equipment if the robot requires the use of anything other than 120VAC to operate.
  - If the robotic gripper is pneumatic operated, teams must provide compressor and pneumatic tubing necessary for operation.

**COMPUTER**

- Teams will need to bring their own programming computer and all necessary cabling, chargers, power cords, etc. to ensure that their computer is functional for the duration of the competition.
- Teams will need to ensure that they have administrator privileges to the computer.
- Teams will need to ensure that any required software for robotic programming is up to date and accessible.

## TOOLS

- The following tools are recommended as a minimum to successfully complete this competition:
  - Wire strippers
  - Crimpers
  - Diagonal Cutters
  - Digital Multimeter (Resistance, VDC, VAC, Diode capabilities)
  - Zip Ties
  - Sticky tabs
    - (for securing zip ties to table)
  - 25' of Ethernet cable
    - To be stripped and used to hardwire peripheral devices
  - Surge Protector
    - Please ensure that it is a surge protector, not just a power strip
  - 25' Extension Cord
  - Safety Glasses
    - Side shields acceptable for competitors who wear prescription eyeglasses
  - Screwdrivers
    - Phillips
    - Slotted
    - Precision
  - Hex Wrenches
    - Metric
    - SAE
  - Battery Operated Drill & Bits
  - Adjustable Wrench
    - 6" approximately
  - Measuring devices
    - Square
    - 6" level
    - Tape Measure (12' or greater)
    - Straight Edge
  - **ANY PROPRIETARY TOOLS SPECIFIC TO YOUR ROBOT!**