

STUDENT HARDWARE DESIGN COMPETITION RULES

IEEE SoutheastCon's Hardware Competition is an engineering design and innovation competition that gives students the opportunity to network and apply engineering principles through the design, fabrication and execution of robotic systems. The competitors develop robots to complete challenges in unique environments. The Hardware Design Competition is a complementary competition to the Hardware Competition.

Competition Timeline

Key Dates

January 15th, 2024	Registration for the Hardware Design Competition opens. Information on how to register for the competition will be posted on the Southeast Con 2024 website
February 15th, 2024	Registration for the Hardware Design Competition closes.
March 15th, 2024	Submit the Hardware Design Competition Presentation to Southeast Con 2024. Submit on the Southeast Con 2024 website.
March 21st-23rd, 2024	Students are on site at SoutheastCon 2024 to present for their assigned time slots.

Competition Process

Below is a breakdown of the competition process. The remaining section of this document will address the details needed to complete each step:

- 1. Create your team and register for the competition**
Each hardware team is allowed to sign up as a team for the design competition. See Hardware Competition Rules for team composition.
- 2. Arrive at SoutheastCon by your assigned time slot to compete**
Teams will be able to select time slots after they registration for the design competition closes.

What to expect

Teams will develop innovative mechanical construction designs, electrical component integration, and computer programming. Teams will investigate robotic intelligence, sense perceptions, dexterity, power, and independence.

Teams are required to fabricate, assemble, and test their robots. This event will consist of two components: a design competition. The locations of these competitions and associated announcements will be posted on <https://ieeesoutheastcon.org>

The Student Hardware Competition is described in a separate document, "IEEE SoutheastCon 2024 Student Hardware Competition Rules". That document is published separately. The document is posted on <https://ieeesoutheastcon.org>

Design Presentation

The presentation should concisely describe the robot design, development, analysis, testing processes, and test results. The design presentation gives teams an opportunity to present the design methodologies, including structured design methods, innovation and engineering principles which were effectively used during the robot design process. The presentation should focus on the considered design alternatives, design challenges and solutions adopted by the team. The design presentation also gives teams an opportunity to provide specification, safety, performance testing results and any updates following the design report.

Presentations will have a maximum time limit of **12 minutes** followed by a maximum of **3 minutes** of questions from the judges.

Design Presentation Format

The presentation should be in a PowerPoint presentation format. A Design Competition PowerPoint Template will be provided on the SoutheastCon 2024 website. The template includes a suggested presentation outline.

What to bring

Teams will submit their presentation via the Southeast Con 2024 website in PDF format on the schedule noted above. Teams will present their presentation using a laptop and projector provided by the competition committee.

Scoring

The Student Design Competition will be scored on participation and completion. Each team submitting a presentation and presenting a presentation will receive design bonus points. Design bonus points are points which will be added to the team's hardware competition points (Please see the hardware competition rules for the total points available). No team will receive more or less design bonus points than any other team. Each team may receive the design bonus points only once. The design bonus points will be applied to each scored hardware run during the hardware competition.