robotix Iran

TECHNOXIAN WORLD ROBOTICS CHAMPIONSHIP IRAN

WORLD'S BIGGEST ROBOTICS CHAMPIONSHIP TECHNOXIAN

Robo Race

TECHNOXIAN IRAN

The 12th National Student and Open robotics Competition RobotixIran

First TechnoXianIran International Competition

KISH-IRAN-2025

DATE: 23-25 June

WWW.ROBOTIXIRAN.COM
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Robo Race

Introduction

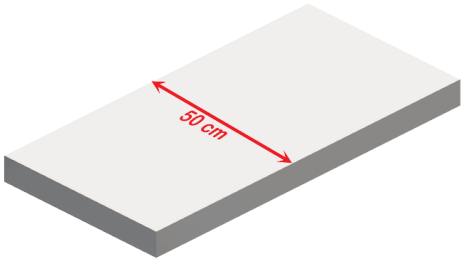
The purpose of this competition is to design and simulate off-road vehicles capable of crossing different surfaces such as rocks, sand, water, slopes, bridges, and more, utilizing various mechanical features like independent chassis systems, suspension systems, and 4WD (Four-Wheel Drive).

Age Requirements

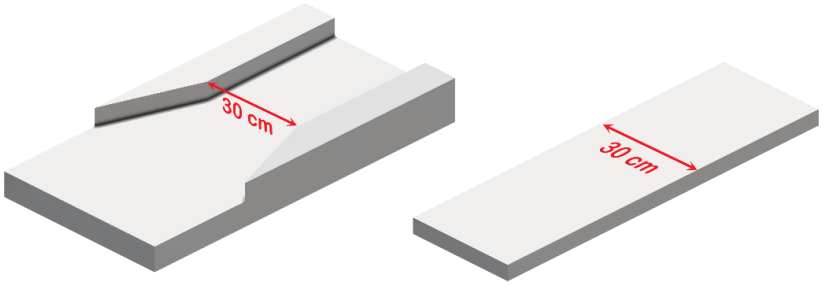
The age range for participants is between 8 and 16 years.

Competition Track

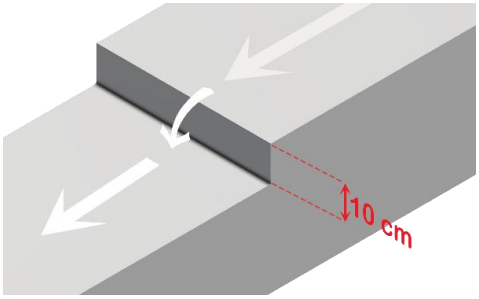
The race track is approximately 20 meters long and 50 centimeters wide, with various obstacles and challenges along the path.



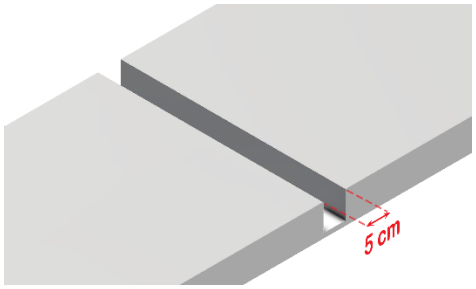
In some sections, the track width can be reduced to 30 centimeters.



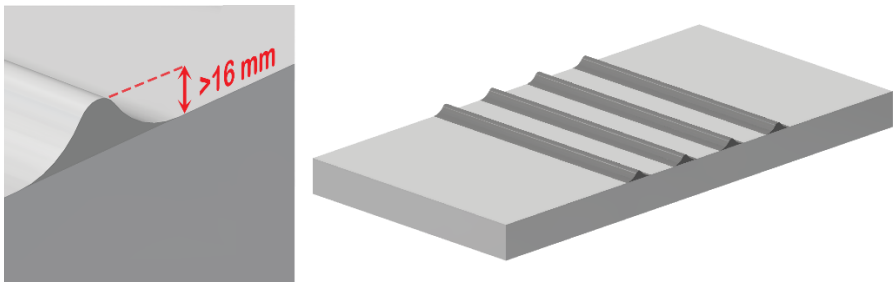
The track includes height differences (up to 10 centimeters from top to bottom).



The track may have gaps with a maximum width of 5 centimeters.

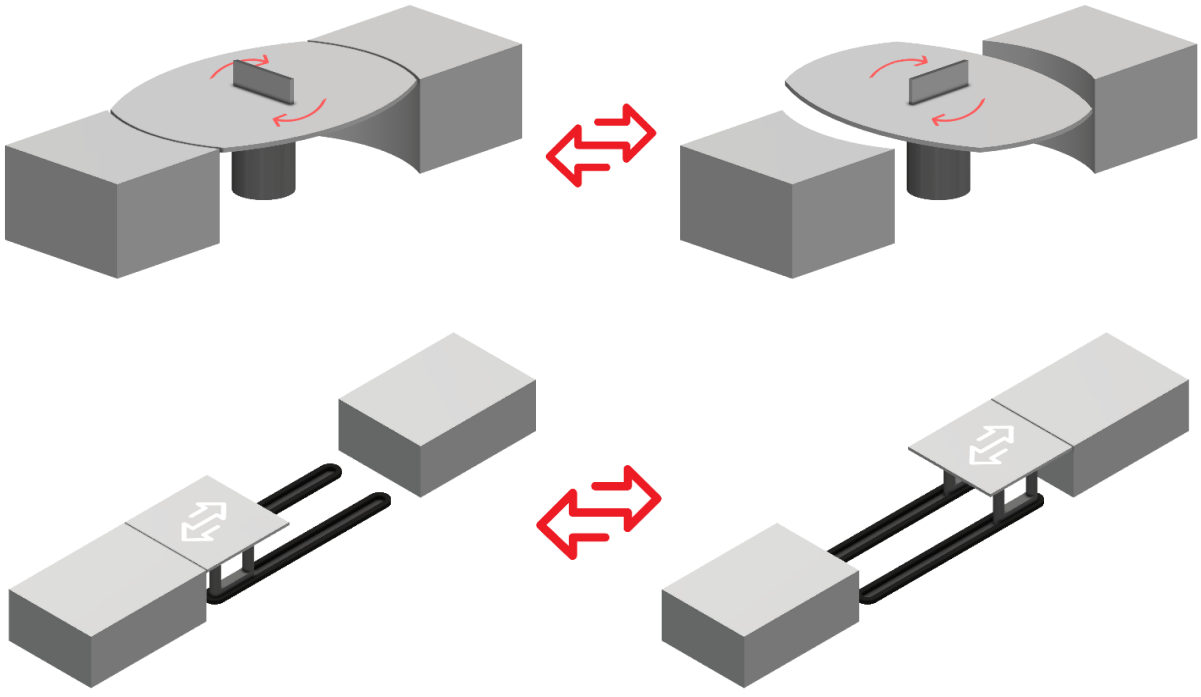


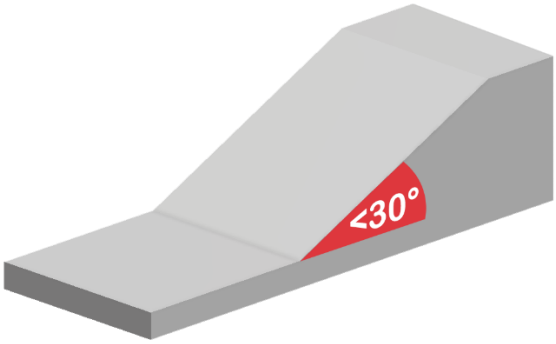
Uneven sections with a maximum height of 3 centimeters may appear on the track.

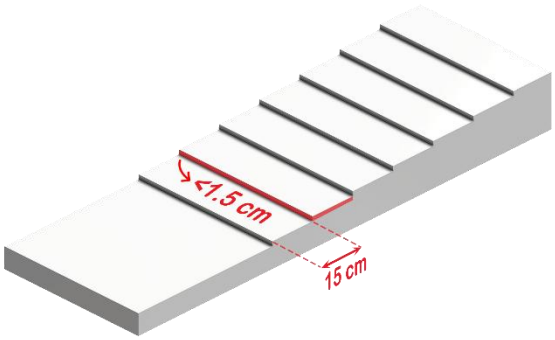


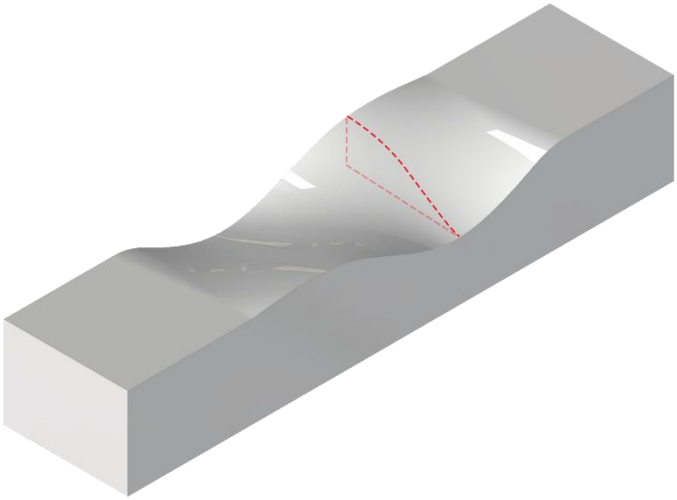
There are obstacles on the track designed to reduce the robot's speed.

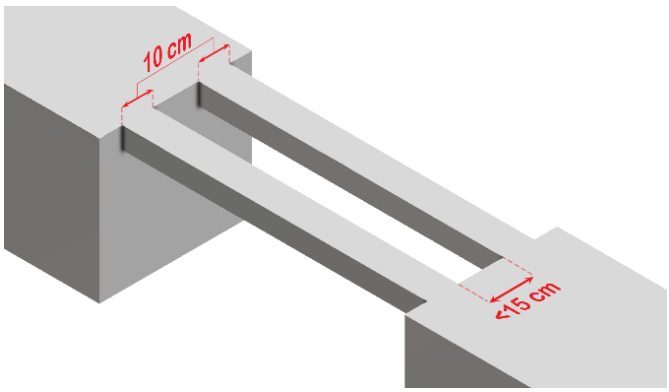
The race track may include: slopes with a maximum angle of 30 degrees, rocky areas, sandy zones, tunnel, narrowing sections along the track, pits and trenches, bridge, See-saw, rotating and reciprocating platforms, a section with variable inclined surface, Stairways with a maximum height of 2 centimeters and depth of 15 centimeters.



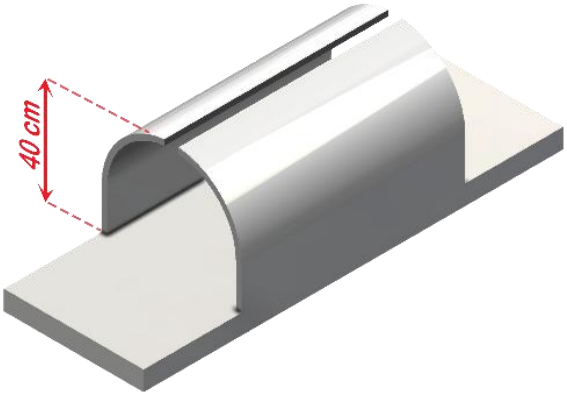




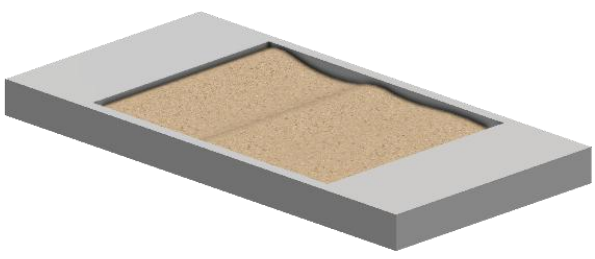




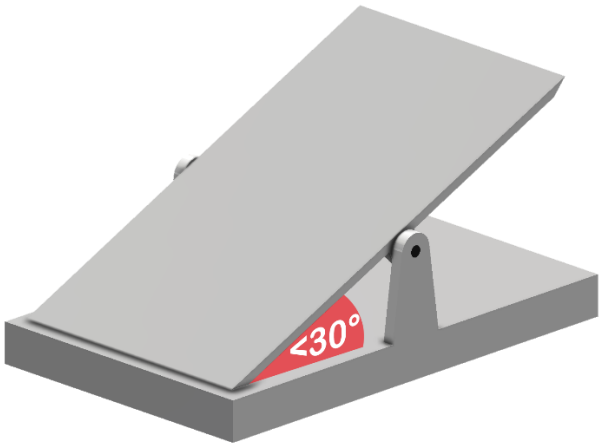
The height of the tunnel is 40 cm.



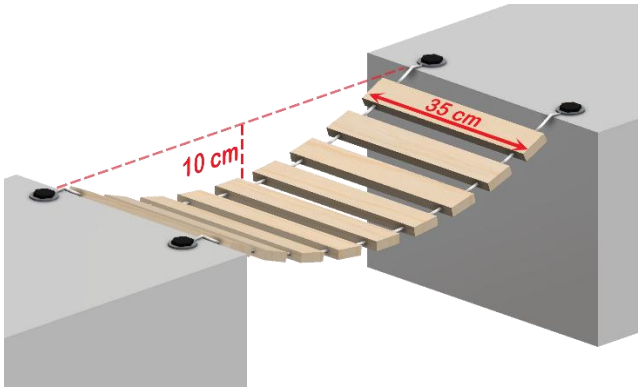
The depth of the sand and stone area from the ground level is 5 cm, with approximately 2 cm being empty from its surface.



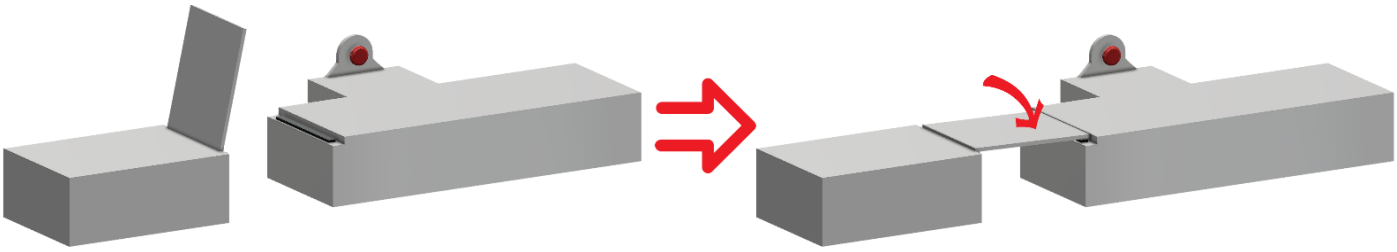
The maximum tilt of the see-saw is 30 degrees

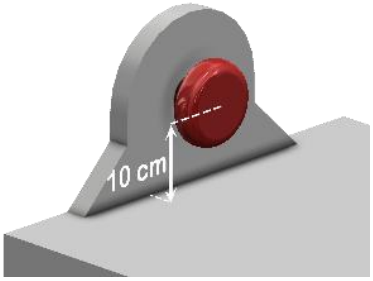


The suspension bridge has a maximum sag of 10 centimeters.



The movable bridge lowers upon pressing a button, reopening the robot's path.





Robot's specifications:

Robot:

- Teams must design robots capable of completing the course and its obstacles in the shortest possible time.
- The design of the robot's appearance is entirely optional and depends on the creativity of the teams.
- Use of commercially available platforms or some parts of them is prohibited unless significant modifications are made.
- Robots must be unique; identical robots will be disqualified.

Dimensions: No restrictions, but robots must navigate obstacles smoothly.

Weight: Maximum weight, including battery, is 5 kilograms with a tolerance of 5%.

Control: Robots must use wireless remote control systems.

Friction Tools: Tools like double-sided tape or rubber are allowed in order to increase friction, but they cannot hinder proper movement of the robot.

Competition Rules:

Team Members:

- Each team consists of up to two core members and one supervisor (not counted as a core member).

Rounds

- The competition consists of three rounds.
- Robots will be quarantined before each round and released only after its completion.

Operator Placement

- Designated operator zones will be provided. Moving between these zones requires referee approval.
- Operators must not enter areas marked with colored lines around the competition field.

Batteries

- Teams are responsible for bringing fully charged batteries. The organizers are not liable for uncharged or low batteries

Repairs During Rounds

- If a robot's battery or electronic components detach during the competition, a team member may reinstall them with referee approval without pausing the timer.

Robot Usage

- Each team must use the same robot throughout the competition. Robots cannot be swapped between rounds.

Identification

- Robots will be marked with team stickers on the first day of the competition. These stickers must remain unchanged until the end. Any alterations will result in disqualification.

Preparation Time

- Teams have 2 minutes to prepare their robots after the start signal. Failure to enter the field within this time will result in disqualification from the round

**The team supervisor or one of the team members must sign the scoring sheet after the competition ends.

Scoring

1. Scoring is weighted with points assigned based on the difficulty of each stage. The total score for a round is calculated as the sum of these weighted scores.
2. In case of a tie, the team with the shortest total time across all three rounds will be declared the winner.

Points

- **Successful Passage:** 30 points for completing each obstacle.
- **Failed Passage:** 40 points deducted, and the robot is moved to the next zone upon request.
- **Retry Requests:** A maximum of 3 retries per obstacle is allowed, each incurring a 10-point deduction.
- **Special Features:** Robots with suspension systems gain 10 extra points.
- **Operator Violations:** Operators leaving their designated zones incur a 10-point penalty.

Disqualification from Rounds

- Robots will be disqualified if:
    1. They are touched more than 3 times during a round.
    2. They are considered too similar to another robot by referees.

Objections

- Objections must be submitted in the specified forms immediately after the competition or during the round. Late objections will not be considered.
- The final decision on disputes lies with the referees and the organizing committee.

Organizational Chart

- Teams are responsible for staying updated on any rule changes up to one week before the competition.
- Teams must register within the specified timeframe and submit a 1-5 minute video (max 100 MB) showcasing their robot's functionality and their motivation for participating. Videos should be emailed to technoxian.iran@gmail.com.
- Robots will undergo technical inspections before the competition.

GOOD LUCK!