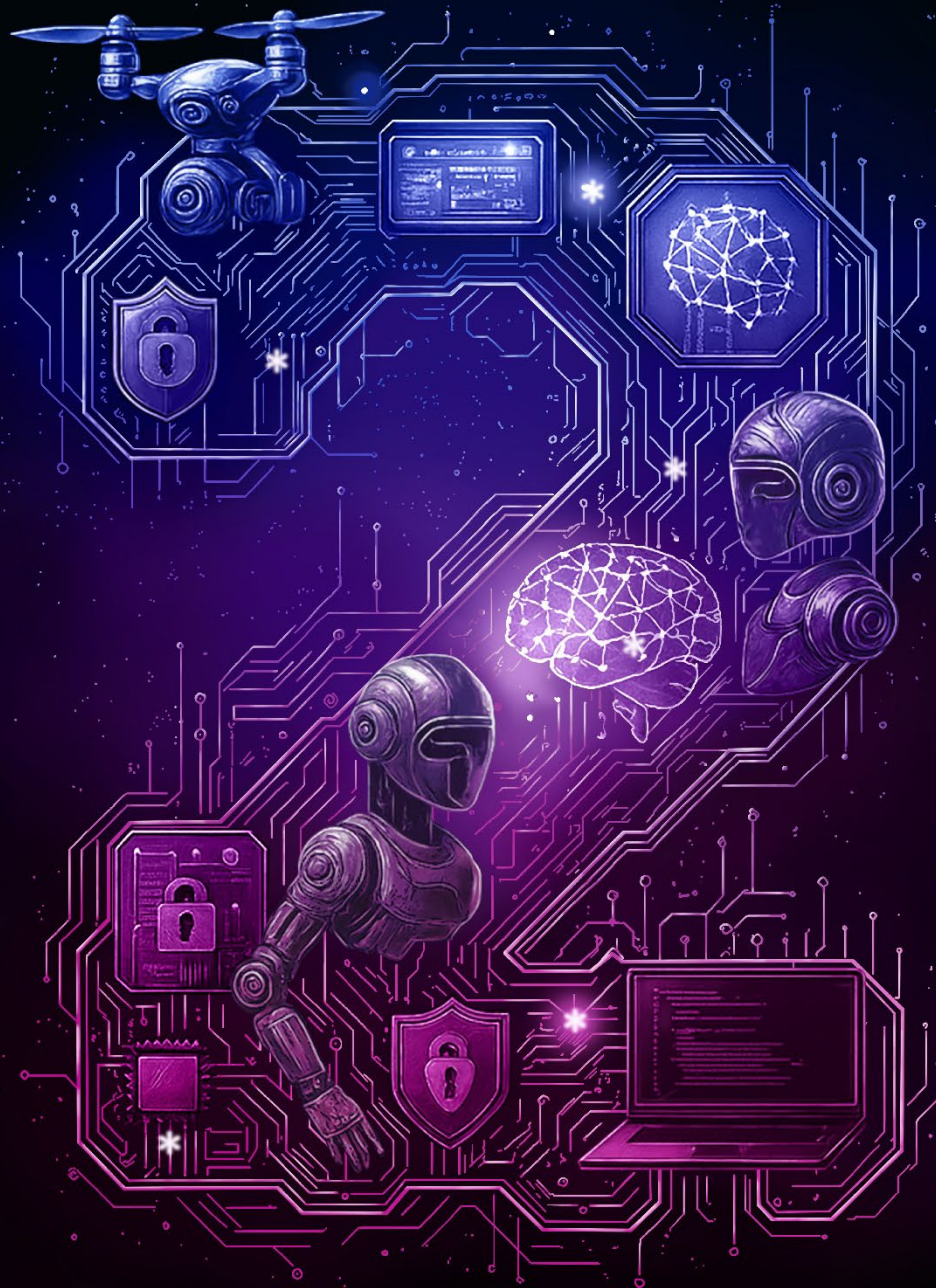


**THE 2ND
EDITION OF
THE INTERNATIONAL
TECHNOLOGY OLYMPICS**

**TECH
OLYMPICS**
TECH.OLYMPICS 2025

**دومین
دوره رقابت‌های بین‌المللی
المپیک فناوری**



RoboFighters League

Junior Robots
Rules and Regulations
Version 1.0



رقابت ربات‌های جنگجو

لیگ ربات‌های جنگجو دانش‌آموزی
نسخه ۱،۰

Introduction

This document outlines the official rules and scoring procedures for the Junior RoboFighter League, part of the 2025 Tech Olympics RoboFighter Competition.

General Rules

- Each team must designate a team supervisor. The supervisor must be of legal age and is fully responsible for the team and all its members.
- Each team is required to complete and upload a Technical Design Paper (TDP) using the official template provided on the competition website at RoboNIT.ir during the preliminary registration phase.
Note: Registration is not considered complete without submitting the TDP. This document will serve as the basis for evaluation in the preliminary round.
- Supervisors are not allowed to be present at the arena during matches. However, they may watch the competition as regular spectators.
- Each team is allowed to use only one robot throughout the entire competition.

Robot Specifications

- The combined dimensions of all robots must not exceed 50 × 50 × 50 cm.
- The total weight of all robots must not exceed 15 kilograms.
Note: Robots that do not comply with the specified size and weight limits will not be allowed to participate in the competition.
Important: In case of non-compliance, teams will be given a maximum of 10 minutes to make the necessary adjustments. Failure to do so within this time will result in disqualification from the match.
Important: Teams that use this grace period for adjustments will not be granted additional repair time during the match.
- Robots must be wirelessly controlled.



Tech Olympics 2025 RoboFighter Competition

Junior RoboFighter League Rules and Regulations (Version 1.0)



- The use of permanent or non-permanent magnets, disruptive magnetic fields, or radio frequency interference is strictly prohibited. All battles must be fought face-to-face through direct physical combat. Any team violating this rule will be disqualified.

Note: The organizing committee holds no responsibility for environmental interference or frequency noise. Teams must take appropriate precautions. It is recommended to support multiple frequency bands.

- The robot's weapon must be **active**.
- The use of various weapons (e.g., hydraulic, hammer, rotary) is permitted, provided that their safety and operator control are verified and approved by the referees before each match. All teams must use safe and standard tools, tanks, and connectors. Robots deemed unsafe will not be allowed to enter the arena.

Note: Any weapon that sprays acidic or non-acidic liquids is strictly prohibited.

Note: Weapons that generate high voltage differentials intended to interfere with the opponent's robot are forbidden.

Note: Teams using pressurized tanks must submit a valid safety certification for the tank, along with the robot's technical specifications. (Tanks must be certified to meet relevant safety standards.)

- Robots may undergo partial or complete modifications during the competition. Such modifications must be approved by the referee committee.

Arena Specifications

- The arena is a square platform with dimensions of 8 × 8 meters.
- The floor surface is made of textured steel sheet (checkered iron).
- The height variation across the arena, due to material properties and construction precision, may be up to ±10 millimeters.
- Designated operator zones are located around the arena, providing both teams with clear visibility of the entire battle area.

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- The arena may include uneven terrain, pits, simple obstacles, or robot-damaging elements to increase the complexity and challenge of the battlefield.

Competition Procedure

- Based on the number of registered teams, the tournament format will be determined as either a round-robin (group stage) or a knockout format (single or double elimination). The final decision will be made on the competition day and announced during the pre-match briefing session.

Note: In certain phases, matches may be arranged according to a ranking table. The rankings will be based on the cumulative points earned by each team in previous rounds. (Scoring details are explained in the "Scoring" section.)

- Following the opening ceremony, a draw ceremony and rules briefing will be held according to the announced schedule, with the presence of all team leaders.

Note: Attendance at the briefing session is mandatory. Teams that miss the session will not be allowed to raise objections regarding refereeing decisions or competition procedures.

- During each match, only two members from each team are allowed in the designated operator zone: one for robot control and one for robot restart.
- The minimum duration for each match is 5 minutes.

Note: Depending on the number of participating teams and the overall event schedule, the match duration may be modified at the discretion of the league's technical committee. Any such changes will be announced during the team briefing.

Note: Only the effective time of each match will be considered in official records.

- Prior to each match, teams will be given 3 minutes to prepare their robot.
- Clause: If both teams agree, the preparation time can be extended to 5 minutes (i.e., 2 extra minutes).

Note: If a team fails to prepare its robot within the allocated time, it will be considered as a withdrawal from that match.



Scoring System

- Points are categorized into positive and negative scores. The total score of a team in a match is the raw score, calculated by summing both positive and negative points.

Positive Points

1. Pushing/Dragging

A robot that pushes or drags its opponent 50 cm in a direction opposite to or perpendicular to the opponent's intended movement earns a push/drag score. (+10 points)

Note: This score is awarded only once per engagement. For instance, if a robot pushes its opponent more than 50 cm during one continuous clash, it earns 10 points. Further points will not be awarded until the robots completely disengage.

2. Lifting

A robot that lifts a part of the opponent at least 5 cm off the ground and holds it for 10 seconds without the opponent restoring its position earns the lifting score. (+15 points)

3. Immobilizing

A robot that successfully immobilizes its opponent for 20 seconds in one spot earns the immobilization score. (+25 points)

4. Heavy Impact

A robot that strikes its opponent and causes a displacement of at least 10 cm in any direction earns the heavy hit score. (+100 points)

Note: Referees are responsible for determining whether a hit qualifies as a heavy impact.

5. Flipping

A robot that flips its opponent onto its side or back earns the flip score. (+100 points)

6. Pitfall

If a robot causes its opponent to fall into a pit within the arena, it earns the pitfall point. (+75 points)

7. Opponent Damage

A robot that causes structural damage to the opponent, such that a component detaches or the robot becomes inoperable without a repair request, earns this point. (+150 points)



8. Technical Knockout (TKO)

A robot that **disables its opponent** through a legal move or strike so that it cannot continue the match earns the TKO point. (+1000 points)

9. Out of Bounds

A robot that forces the opponent out of the designated arena boundary earns the out-of-bounds point. (+1000 points)

Note: A robot is considered out of bounds when any part of it completely crosses the outer boundary line.

Negative Points

1. Inactivity

A robot that remains stationary for 20 seconds without interference from the opponent is penalized. (-25 points)

2. Violation/Foul

A robot that commits any form of foul—such as touching the robot without repair permission, entering the arena without authorization, starting before the referee's signal, arguing with referees during the match, or any other action deemed a violation by the judging committee—will be penalized. (-50 points)

3. Pitfall (Self-Inflicted)

If a robot falls into a pit on its own, without being pushed or influenced by the opponent, it will receive a penalty. (-50 points)

4. Passivity Warning

If a robot shows passive behavior (e.g., fleeing from the opponent, refusing to engage), it will receive a 20-second warning to resume combat. Failure to do so will result in a penalty. (-25 points)

5. Out of Bounds (Self-Exit)

If a robot leaves the designated play area without any interference from the opponent, it will be penalized. (-50 points)

6. Repair Timeout

Each team is allowed one repair timeout per match, which results in a penalty. (-100 points)

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***Note:** Repair requests are only allowed during match stoppages. The repair duration is limited to 2 minutes. If the robot is unable to resume after the repair period, it will be considered a forfeit.*

***Note:** Repair requests are only allowed during stoppage. Maximum repair time is 3 minutes. Failure to resume after this period will result in forfeit.*

***Additional Notes:** When multiple maneuvers or events occur in succession, all applicable points (positive and negative) are counted for each robot.*

Match Reset Protocol

Referees may announce a reset during the match under the following conditions. When a reset is declared, both robots must return to their designated positions and resume the match only upon the referee's signal:

1. After execution of:
 - a 10-second lift,
 - a 20-second immobilization, or
 - a 20-second inactivity.
2. In case of a lock-up where both robots are unable to disengage by themselves.

***Note:** Unless a reset is officially announced by the referees, no team member is allowed to enter the arena. Any violation of this rule will result in a penalty for misconduct.*

Winning Conditions

A team can win a match through one of the following methods:

1. Opponent Forfeiture

If a team withdraws from the match for any reason, the opposing team is declared the winner and awarded +500 points, while the forfeiting team receives -500 points.

***Note:** Failure to present the robot for official weighing at the scheduled time will be considered a forfeit and penalized accordingly.*

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Note: If a team withdraws during a match, all points (positive and negative) earned up to that moment will be recorded.

2. Technical Knockout (TKO)

If a robot disables its opponent such that it cannot continue the match, the referee will stop the match and declare a win by TKO, awarding +1000 points to the winner. The losing team retains its previously earned points (positive and negative).

3. End of Match Time

If the match reaches its scheduled time limit, the team with the higher total score will be declared the winner.

Note: In the event of a tie, the robot with the lower weight will be declared the winner. If weights are equal, the smaller-sized robot will be declared the winner.

Dispute Resolution

- No objections or complaints may be raised during the match; doing so will result in a point deduction.
- All official complaints must be submitted in writing by the team leader to the league's Dispute Resolution Committee.

Note: Complaints directed toward the referees, technical staff, or event organizers are prohibited. The technical committee reserves the right to deduct points or disqualify any violating team.

- Complaints will be reviewed after the end of each match round, and responses will be communicated to team leaders.

• *Note: If the complaint is upheld and the review is ruled in the team's favor, they retain the right to use another review request in future rounds.*

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Amendments to Rules

No major changes to the rules will be made; however, minor updates or clarifications may occur. Teams are advised to check the official competition website for the latest rule updates at least **10 days** prior to the event.

