

# **2026 TIRT** Lightweight Sumo Robots

## Competition Regulations

May 20, 2025 version

### **I. Project Background:**

ShaYangYe has long been dedicated to advancing robotics education and strengthening industry connections, actively working to position Taiwan as a key global stage for international robotics competitions. Since 2018, it has co-hosted the “Taoyuan International New Generation Robotics Festival” with the Taoyuan City Government for eight consecutive years, pioneering the integration of four major robotics competition domains: land, sea, air, and maker. Over the years, the event has achieved remarkable results, attracting more than 12 million participants both online and offline and bringing together teams from 20 countries, with a total of 11,900 domestic and international teams participating. Through the establishment of robotics training and competition platforms, the initiative integrates industry resources, continuously expands the global perspective of Taiwanese participants, and is steadily building a cross-disciplinary international robotics event based in Taoyuan with a global outlook. Centered on diverse programming control and maker applications, the competition showcases Taiwan’s strengths in smart manufacturing and technological innovation while serving as an important gateway to TIRT international competitions.

### **II. Project Goals:**

1. Through competition activities and study exchanges, increase opportunities for domestic and international teams to observe program design, mechatronics integration, and sharing exchanges to stimulate student learning motivation.
2. By combining various open control systems and planning different competition targets, integrate and expand students' creativity, design ability, integration skills, and programming ability.

### **III. Supervising Units:**

Taoyuan City Government, Taoyuan City Council

### **IV. Organizer:**

Department of Economic Development. Taoyuan

### **V. Implementing Unit:**

ShaYangYe Charity and Education Foundation, Taoyuan City

## VI. Participants:

1. Students from elementary schools, junior high schools, senior high schools, vocational high schools, and colleges nationwide (including master's and doctoral students).
2. Athletes must have a valid student status recognized by the Ministry of Education.
3. International teams of the same age are allowed to participate (must provide proof of valid student status in their country).

## VII. Event Categories:

Sumo Robot Lightweight Class

## VIII. Competition Grouping:

1. Elementary School Group: Restricted to elementary school students, with a maximum of 3 players per team.
2. Junior High School Group: Restricted to junior high school students, with a maximum of 3 players per team.
3. Senior High School/Vocational School/College Group: Restricted to high school, vocational school, and college students (including master's and doctoral students), with a maximum of 3 players per team.

## IX. Activity Description and Schedule Planning:

1. Registration Method: Visit the TIRT official website (<https://www.tirtpointsrace.org/>)
2. Registration Period : From May 25, 2026, to September 25, 2026 (subject to adjustment based on team registration status).
3. Competition Date :
  - a) Elementary School Group : November 08, 2026
  - b) Junior High School Group : November 08, 2026
  - c) Senior High School/Vocational School/College Group : November 08, 2026
4. Competition Venue: Taoyuan Municipal Gymnasium (No. 1, Section 1, 3rd Road, Taoyuan District, Taoyuan City 330)

## X. Other Matters:

1. The organizer reserves the right to modify the regulations and rules of the event. For any matters not covered herein, please refer to the latest announcements by the organizer on the official competition website. In case of any doubts or inquiries, please contact the organizer at the following numbers: Mr. Chiu at extension 5334 (Tel: 03-3623452) or Mr. Qin at extension 5338 (Tel: 03-3623452).



TIRT Official website.

**TIRT**  
2026 AI TAOYUAN

# 2026 TIRT Lightweight Sumo Robots

## Competition Rules

May 01, 2026 version

### I. Eligibility:

Participants are divided into three categories: Elementary School Division, Junior High School Division, and Senior High School & College Division.

The Senior High School & College Division is conducted as a combined inter-level competition, and awards and recognitions will be presented jointly within this division.

### II. Robot Specifications:

Please refer to the *2026 TIRT Lightweight Sumo Robot Competition – Robot Specification Guidelines*.

### III. Competition Format:

The competition format generally consists of the Preliminary Round, Repechage Round, and Round-Robin Finals.

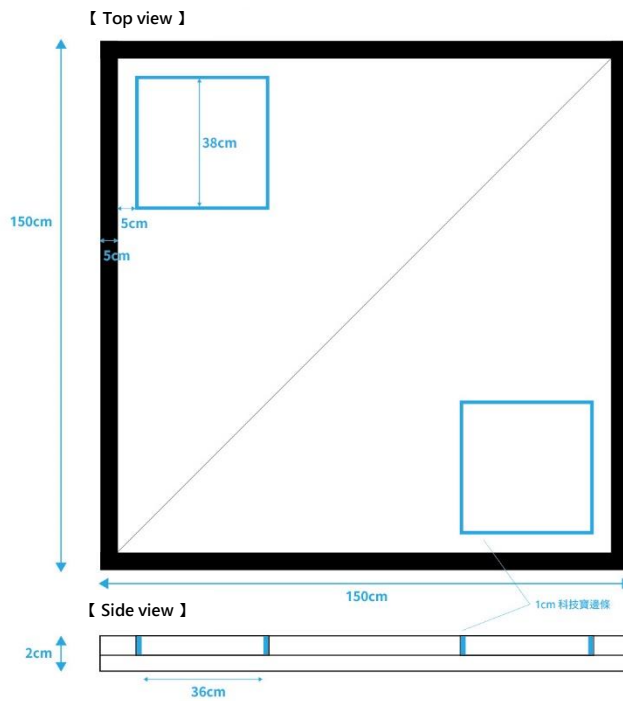
Any adjustments to the competition format shall be subject to the announcements made by the judges on the day of the event.

### IV. Venue Specifications:

1. The competition field is a square arena with a white surface and black boundary lines.
2. The field measures 150 cm × 150 cm.
3. The black boundary line is 5 cm in width.
4. The front edge of the starting zone is located 32 cm from the center line.
5. The rear edge of the starting zone is located 5 cm from both side baselines.
6. The field thickness is 2 cm.
7. The starting zone is a square area measuring 38 cm × 38 cm, while the allowable robot placement area is limited to a 36 cm × 36 cm square.
8. All four sides of the starting zone are equipped with protective bumper material measuring 1 cm in height and 1 cm in width.
9. The starting zone is recessed to a depth of 1 cm.
10. The center line is a thin visible line that can be seen by the human eye but does not interfere with sensors.

#### Note:

**The starting zone of the competition field is recessed by 1 cm compared to the rest of the arena surface. If the sumo robot chassis is designed with insufficient ground clearance, it may become stuck and affect operation. Participating teams are advised to pay close attention to the chassis clearance design of their robots.**



## V. Competition Format Description:

The organizing committee will conduct a random draw prior to the competition to assign all teams their competition numbers. These assigned numbers will be used to determine placement in each stage of the competition.

The competition number designations are as follows:

Elementary School Division: A, C

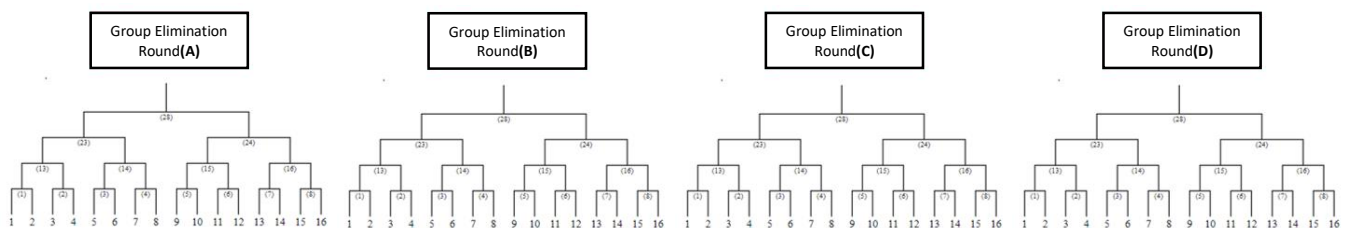
Junior High School Division: G, T

Senior High School & College Division: R, U

### 1. Preliminary Round:

All teams will be divided into several groups (based on the total number of registered teams) and will compete in a group-stage elimination format. The winner of each group will advance to the next stage.

Each match consists of three rounds and follows a best-of-three format (two wins out of three rounds).



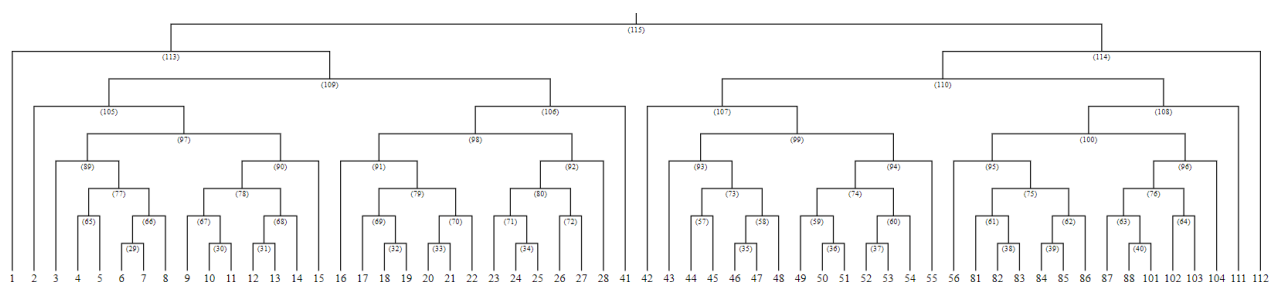
### 2. Repechage Round:

Teams eliminated in the Preliminary Round will compete in a knockout format to determine the Repechage Champion.

Each match consists of one round and follows a single-win format (one win advances).

Teams that advanced further in the Preliminary Round will be assigned higher seeding positions in this stage.

## Champion of the Repechage



### 3. Round-Robin Finals:

Group champions from the Preliminary Round will compete in a round-robin stage. Final rankings will be determined based on the number of match wins and losses. If a Repechage Round is held, the Repechage Champion will also be included in this stage.

In the event that teams have identical match win–loss records, rankings will be determined in the following order:

- Number of round wins
- If still tied, number of round losses
- If still tied, a single sudden-death round will be conducted

Each match consists of five rounds and follows a best-of-five format (three wins out of five rounds).

## VI.Competition Regulations:

- After completing on-site registration, all team members, instructors, and coaches must proactively collect their identification badges from the organizing committee and wear them in a clearly visible position at all times. Each participant, teacher, and coach is limited to one badge. Badges cannot be collected on behalf of others and will not be reissued if lost.
- After receiving the identification badge, participants must clearly write the team name, competition number, and participant name in the designated blank area for verification by the organizing committee. The badge must be worn in a clearly visible position within the judges' field of view at all times during the competition. Any individual who fails to properly wear the identification badge in accordance with the regulations will not be recognized by the organizing committee as a member of the participating team.
- Any individual found impersonating a member of a participating team will be disqualified upon verification. The relevant team will have its competition eligibility and award qualifications revoked.
- After completing registration, all accompanying personnel other than registered competitors, instructors, and coaches must leave the competition area. If any accompanying personnel fail to comply after being instructed to leave, and the organizing committee confirms the violation, the associated team will be disqualified from the competition and will forfeit any awarded results.

5. After completing registration, teams may conduct practice sessions using the practice pass indicated on the score sheet before the end of the official practice period. Each team is entitled to two (2) practice attempts. Impersonation or misuse of practice privileges is strictly prohibited. Any violation will result in disqualification from the Preliminary Round.
6. All practice sessions in the main competition area must be registered in advance. Each practice session is limited to one (1) minute. A maximum of one (1) team is allowed in the practice area at a time, and only one (1) team member may enter. Instructors are permitted to accompany participants. Any violation of these rules will result in disqualification from the Preliminary Round.
7. During practice in the main competition area, teams are allowed to use computers or mobile devices to adjust programming and may modify their robot on-site. However, they must not interfere with other teams' practice sessions. Any violation will result in disqualification from the competition.
8. Each practice session is limited to one (1) minute. Upon completion of the practice time, teams must immediately collect their sumo robot and all accompanying equipment and leave the practice area promptly. If a team fails to comply after being instructed to leave, the organizing committee reserves the right to disqualify the team from the competition. Any items left behind in the competition area will not be the responsibility of the organizing committee, and the committee reserves the right to dispose of such items at its discretion.
9. After the official practice period has ended, the organizing committee will no longer accept any practice registration. Only teams that have already registered but have not yet practiced, or teams that have not yet reached their one (1) minute practice limit, may continue their practice. All other practice activities in the main competition area are strictly prohibited. Any violation will result in disqualification from the competition.
10. When equipment inspection begins, teams must place their sumo robot in the designated inspection area upon the referee's instruction. After passing inspection, no further adjustments, disassembly, or modifications to the robot are allowed. Any violation will result in disqualification from the competition.
11. Teams that fail to complete and pass the equipment inspection within the designated inspection period will be disqualified from the competition.
12. After passing equipment inspection, participants must place their robot in the designated machine staging area by themselves. If staff provide location guidance or assist with positioning (participants are still responsible for final confirmation), any resulting issues shall be borne by the participants.
13. If damage to another team's robot is not caused by normal competition actions, the referee will assess whether the offending team shall be penalized, including but not limited to loss of eligibility for the current stage, disqualification from the competition, or revocation of awards.

14. If a participating robot is damaged after the inspection process due to non-competition-related actions by another team, the affected team may perform repairs under the supervision of staff. Repairs may include battery replacement, controller board replacement, and program re-uploading.  
After repairs are completed, the robot must undergo re-inspection. A maximum time limit of ten (10) minutes is allowed. Failure to pass re-inspection within the time limit will result in disqualification from the competition.  
If the referee committee determines that the incident was intentionally premeditated, the involved team members will be placed on a blacklist and permanently prohibited from participating in any TIRT-related competitions.
15. Each team is allowed to use only one (1) sumo robot. Exchanging robots or parts between different teams is strictly prohibited, except for repair and cleaning tools. Any violation will result in disqualification from the competition.
16. Before each competition stage begins, each team must assign one (1) participant (the competing player) to enter the player staging area. Substitution of the competing player is allowed between matches when the team is not actively competing; however, substitutions are not permitted during the Round-Robin stage.
17. Before each match, teams will be called (by team name or competition number) up to two (2) times, with an interval of no more than ten (10) seconds between calls. Failure to report within ten (10) seconds after the final call will result in disqualification from that stage of competition.
18. Before entering the main competition area, competing participants must proactively verify the information on the team score sheet. Only after verification is completed may they retrieve their sumo robot. Any violation will result in disqualification from that stage of competition.
19. When retrieving the sumo robot, any attempt to take a robot belonging to another team will result in disqualification from the current competition stage. If staff provide location guidance or assist in retrieving the robot, participants are responsible for independently verifying correctness, and any resulting issues shall be borne by the participants.
20. After retrieving the sumo robot, competition staff will issue identification accessories (e.g., ropes, straps, clips, etc.). Competing participants must securely attach these items to a clearly visible part of the robot for referee identification purposes.  
All identification accessories must be returned after each match. Failure to return the provided items will result in ineligibility for awards.
21. After entering the main competition area, competing participants are strictly prohibited from receiving any items from individuals inside or outside the competition area, except for authorized organizing committee staff.  
Similarly, upon leaving the main competition area, participants are not permitted to carry any items other than those originally brought into the area upon entry. Any violation of this regulation will result in disqualification from the current competition stage.

22. If participants fail to retrieve items brought into the competition area upon leaving, the organizing committee assumes no responsibility for their safekeeping and reserves the right to dispose of such items at its discretion.
23. Before each match, the starting side of the competition area shall be determined by a coin toss or rock–paper–scissors. The winner of the draw may choose their preferred starting side. If a match is not decided after a round is completed, both teams must switch sides for the next round.
24. After the starting positions are determined, either team may request preparation time once both robots have arrived at their respective starting areas. If either team makes such a request, both teams will share the preparation period. Once the referee announces the start of preparation, a one (1) minute preparation time will begin. During this time, teams may adjust their sumo robot, including modifications to the chassis or sensor positions, and may replace batteries. However, uploading or modifying programs is strictly prohibited. Any violation will result in disqualification from the current competition stage.
25. When the referee announces the end of the preparation period, participants must immediately stop all preparation actions. Any team that fails to comply after being instructed by the referee will be disqualified from the current competition stage.
26. After completing preparation or when the preparation time ends, participants must place their sumo robot in the designated starting zone. The orientation of the robot is not restricted; however, all main and auxiliary wheels must be in contact with the ground.  
Once the robot has been placed in the starting zone, it may not be removed. If a robot leaves the starting zone after placement, that team will be deemed to have lost the round, and the opposing team will be declared the winner.  
If both teams violate this rule, the lighter robot will be declared the winner of the round. If both robots have the same weight, the round shall be replayed.
27. If the sumo robot cannot be fully placed within the starting zone, the team will be deemed to have lost the current round, and the opposing team shall be declared the winner.  
If both teams violate this rule, the lighter robot will be declared the winner of the round. If both robots have the same weight, the round shall be replayed.
28. After the sumo robot has been placed in the starting zone, the competing participant must raise one hand to indicate that placement is complete.  
If a team fails to perform this gesture after being instructed by the referee, the team will be deemed to have lost the current round, and the opposing team shall be declared the winner.  
If both teams violate this rule, the lighter robot will be declared the winner of the round. If both robots have the same weight, the round shall be replayed.

29. After the referee announces the start of the match (or blows the whistle), both participants may lower their raised hands and must activate their sumo robots within five (5) seconds. Multi-stage activation is permitted. The method of activation is not restricted; however, activation via computers or mobile devices is strictly prohibited.
- If a team fails to activate their robot within five (5) seconds after the referee's signal, or if the activation method is not accepted by the referee, the team will be deemed to have lost the round, and the opponent shall be declared the winner. If both teams fail to complete activation, the lighter robot will be declared the winner of the round. If both robots have the same weight, the round shall be replayed.
- For any special activation methods, teams must consult the organizing committee in advance; otherwise, the referee's decision shall be final.
30. From the moment before activation until after the robot has been activated, the sumo robot's main and auxiliary wheels must remain within the competition area. Any violation of this rule will result in the team being deemed to have lost the round, and the opposing team shall be declared the winner.
- If both teams violate this rule simultaneously, the lighter robot will be declared the winner of the round. If both robots have the same weight, the round shall be replayed.
31. After the referee announces the start of the match and the sumo robot is activated, the competing participant must, within five (5) seconds, quickly withdraw to the designated area while carrying all personal and accompanying items.
- If a team fails to comply after being instructed by the referee beyond the five (5) second limit, the opposing team shall be declared the winner. If both teams violate this rule simultaneously, the lighter robot will be declared the winner of the round. If both robots have the same weight, the round shall be replayed.
32. After both sumo robots have been activated, they must first make contact with their own black boundary line before engaging the opponent's robot.
- Any violation of this rule will result in the team being deemed to have lost the round, and the opponent shall be declared the winner. If both teams violate this rule simultaneously, the lighter robot will be declared the winner. If both robots have the same weight, the round shall be replayed.
33. After the referee announces the start of the match, each round is limited to one (1) minute. The referee will make a final decision based on the condition of the robots at the moment the time expires.
- If both robots remain within the competition area at the end of the time limit, the lighter robot will be declared the winner of the round. If both robots have the same weight, the round shall be replayed.
34. If a sumo robot makes contact with the floor outside the competition area, that team will be deemed to have lost the round, and the opposing team shall be declared the winner.
- If both robots go out of bounds simultaneously, the lighter robot will be declared the winner of the round. If both robots have the same weight, the round shall be replayed.

35. If, after the start of the match, a sumo robot remains within its starting zone without any effective movement or searching behavior, the referee may initiate a “stall judgment.”  
The referee will begin a five (5) second countdown. If the robot fails to leave the starting zone within this period, the team will be deemed to have lost the round, and the opponent shall be declared the winner.  
If both teams violate this rule simultaneously, the lighter robot will be declared the winner of the round. If both robots have the same weight, the round shall be replayed.
36. During the match, if both sumo robots remain in a balanced pushing state after collision, or if there is no contact between them for an extended period, the referee has the authority to declare a stalemate condition.  
The referee will initiate a five (5) second count. After the count, the match clock will be paused. Both robots will be retrieved, powered off, and the remaining match time will be used to restart the round.
37. If either robot becomes clearly disabled during the match due to any reason (e.g., overturning, being stuck, immobility, power loss, etc.), the referee will initiate a “disabled judgment.”  
After the judgment begins, if the robot fails to recover normal operation within five (5) seconds, the team will be deemed to have lost the round, and the opponent shall be declared the winner.  
If both robots are simultaneously disabled, the lighter robot will be declared the winner. If both robots have the same weight, the round shall be replayed.
38. During any referee countdown process, if the situation on the field does not meet the conditions described in Rules 35, 36, or 37, the referee has the authority to stop the countdown and resume the match.
39. After each round begins, if any part of a sumo robot unintentionally detaches, such components shall no longer be considered part of the robot. Until the round is decided, the referee has the authority to leave any detached parts on the field without removal.  
If any detached parts affect the outcome of the round, both competing teams shall not raise any objections.
40. If a competing participant manually removes any detached objects from the field after the match has begun, the incident will be adjudicated in accordance with Rule 44.
41. After each round is completed, participants must retrieve any detached parts or dropped items from the field by themselves. If participants fail to do so after being instructed by the referee, the referee reserves the right to dispose of such items at their discretion.
42. If the referee determines that a team’s robot is designed with a mechanism intended to cause parts to detach—regardless of intent—the referee has the authority to award the match to the opposing team. In such cases, the detached parts shall not be reattached to the sumo robot.

43. From the start of each round until a winner is determined, no reassembly, replacement of parts, or battery changes of the sumo robot are allowed. Teams are also not permitted to request a suspension of the match.
44. After a match begins, if any related team personnel interfere with the competition by any means, the match shall be immediately stopped, and the opposing team will be declared the winner. The interfering team will be disqualified from the competition.  
If the interference is caused by individuals not affiliated with either participating team, the round shall be replayed.
45. In the event that multiple competition rules are triggered simultaneously, the priority of judgment shall be as follows: Rule 34, Rule 32, Rule 29, Rule 37, Rule 35.
46. After the referee announces the result of a round, participants must retrieve their sumo robots by themselves. Any damage occurring during the retrieval process, or any issues arising from staff assistance in retrieving the robots, shall not be governed by Rules 13 or 14. Participants shall bear full responsibility.
47. After each round result is determined (except the final round of each match), teams may request repair time. If either team requests it, both teams will share the repair period.  
Once the referee announces the start of the repair period, a 30-second timer will begin. Only the competing participant is allowed to perform repairs; teammates are not permitted to enter the competition area to assist.
48. After the repair period begins, both teams may adjust their sumo robots on-site or reassemble any detached parts (including changes to the robot body or sensor positions). However, no additional components may be added, and programming uploads or battery replacement are strictly prohibited.
49. When the referee announces the end of the repair period, participants must immediately stop all repair activities. Any team that fails to comply after being instructed by the referee will be disqualified from the current stage of the competition.
50. After each match (except in the Repechage Round), participants must return their sumo robot to the designated storage area. If a team removes its robot from the competition venue, it will be automatically deemed to have forfeited the remaining stages of the competition.
51. In each match of the Repechage Round, the losing team must remove and take their sumo robot out of the competition area. If a robot is left in the competition area, the organizing committee assumes no responsibility for its safekeeping and reserves the right to dispose of the robot at its discretion.
52. From the start of the Round-Robin Stage until its completion, no substitution of competing participants is allowed, except in cases of force majeure.
53. After each match, teams must proactively verify the advancement chart or Round-Robin score records with the referee. Any objections must be raised immediately at the time of verification.  
Once participants have left the competition area or the competition has concluded, no further objections will be accepted.

54. The referee will record the match results, and teams are required to sign for confirmation. Any objections must be raised immediately at the time of verification. Once the results have been recorded by the referee and the participants have left the competition area or the match has concluded, no further objections will be accepted.
55. If a team fails to complete the signing of the match results before leaving the competition area, the team shall forfeit the right to contest or dispute the results.
56. If a team refuses to sign the match results due to disagreement with the ruling, the organizing committee will deem the team disqualified from the competition and revoke any awards.
57. After each match, unless otherwise required by the organizing committee, participants must immediately return to the designated staging area. If a team fails to comply after being instructed by staff, the organizing committee will disqualify the team from the competition and revoke any awards.
58. If a team is disqualified from the competition (at any stage), the organizing committee reserves the right to sign the match results on behalf of that team.
59. Any disputes must be raised by participants directly to the referee during the competition. The referee will handle and adjudicate the matter on-site. No objections will be accepted after the match has ended or after the results have been signed. In the event of any disagreement, the final decision shall be based on the consensus of the referee panel and shall not be subject to appeal.
60. This competition does not accept any video recordings or photographic materials taken by individuals as evidence for contesting or filing complaints regarding competition results.
61. The organizing committee will provide competition venues for teams to conduct pre-match practice sessions. Practice times shall follow the official schedule announced by the committee. Teams must queue at the designated competition area during the specified time for sumo robot testing. Participants must bring their own sumo robots. It is strictly prohibited to bring competition field materials (e.g., field paper or markings) to the venue for practice purposes.
62. The organizing committee will not provide any on-site power supply. Teams must prepare all necessary equipment in advance. If a team connects to the competition venue's power supply without authorization and refuses to comply after being instructed, the team will be disqualified from the competition and any awards will be revoked.
63. If a team connects to an external power source outside of the designated competition area and receives complaints from other parties, the team will be disqualified from the competition and all awards will be revoked.
64. Any accidents or consequences arising from unauthorized electrical connections shall be the sole responsibility of the participating team. Any related compensation shall also be borne by the team.





65. Damaging or contaminating the competition field is strictly prohibited. Severe violations will result in disqualification from the competition. If the competition field is damaged or contaminated during a match, the match will be immediately stopped, and the opposing team shall be declared the winner. Any subsequent compensation responsibilities shall be borne by the offending team.

**In the event of any disputes or uncertainties on the day of the competition, the referee panel shall hold the final authority of interpretation. No objections shall be accepted.**

## VII. Awards and Recognition:

The award selection criteria will be based on the results of the Preliminary Round and the Round-Robin Stage.

Awards will be presented separately for the following divisions: Elementary School Division, Junior High School Division, and Senior High School & College Division.

Ranking	Bonus (NTD)	Certificate
 <b>1<sup>st</sup> Prize</b>	<b>\$5,000</b>	<b>V</b>
 <b>2<sup>nd</sup> Prize</b>	<b>\$3,000</b>	<b>V</b>
 <b>3<sup>rd</sup> Prize</b>	<b>\$2,000</b>	<b>V</b>
 <b>Excellent Work</b>	<b>-</b>	<b>V</b>