

*** General Rule:** Please check the general rule first before read this rule. General rule take precedence over any rules.

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1. Game Description

The game is created to give participants opportunities to discover and encourage their robotics talents to lead the world in the future. Participants are required to design, construct, and present their robots according to theme presented by IROC. There are no limitations on material or size, so participants can express their imagination freely.

2. Robot rule

2-1. Robot type

There is no restriction on robot type or material.

2-2. Robot size

Participating teams must submit their robot that has hardware. Size of the robot must be able to be presented in given size of the area, participants take full responsibility for disadvantages occurred by size of the robot

2-3. Construction condition

Software, Props, background, or controller can be **pre-made**, but other parts of robot should be built on-site. **Strongly prohibit making parts that can threat other participants.**

2-4. Power source: No restriction

2-5. Operation: Robots should work with an independent electric power supply; it cannot use a combustible device.

2-5-1. Robots must act according to participants' intention.

2-5-2. Example of failure (Not matching to participant's intention)

2-5-2-1. Walking robot that cannot walk

2-5-2-2. Washing robot that cannot wash.

2-5-2-3. Climbing robot that cannot climb

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3. Playfield Regulation

3-1. There is no specific playfield, but each team will be given a booth under size of 3,000mm x 3,000mm (default) and a table size of 1,800mm x 600mm. (if requested) They can also utilize area around table while not disrupting other teams. Size of the booth and table can be altered in the future

4. Competition

4-1. Main Theme

4-1-1. Dong-Hae city has decided top 5 global social issues.

4-1-2. **Future 5: Food / Medical and Healthcare / Education / Fire disaster / Aerospace**

4-1-3. The same topic can be upgraded and presented in a complicated version for the following year.

Ex) Building a portable rescue robot for rescue situation (2019) -> Building a rescue robot that has a solar cell panel for power system. (2020)

4-2. A national preliminary round

If you (or your country) have a national preliminary round, round will be conduct online, participants will send their production plan and development reports.

Only participants who passed that round can go to the final round. Please refer to followings below.

4-2-1. In the production plan and development report, there must be a title, writer, affiliation, introduction, research question, research method, development content and conclusion. It should be creative and effectively organized.

4-2-5. When you submit the file, the file name should be

'year_country_division(Junior/Challenge)_teamname_team members' name'.

Ex)2019_Korea_JR_Team avengers_Ropi_Roah

4-2-6. Title of email has to be same as the file name.

4-3. Composition of Main competition

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It will be divided into 'Free exhibition' and 'Presentation'.

4-4. Free exhibition

- 4-4-1. Each team should answer to the questions from visitors who are interested in their project and robot in the assigned booth. (Free exhibition time will be announced on the website in advance.)
- 4-4-2. Each team should prepare their promotional materials for their project.
- 4-4-3. Organizer will not take any responsibilities for the damages, breakdown and robbery occurred during the exhibition.
- 4-4-4. The size of poster used during the exhibition should be 1,200mm x 1,800mm. (W x H) It should include a title, writer, affiliation, introduction, research question, research method, development content and conclusion. It should be creative and effectively organized.
- 4-4-5. the size of robot can't exceed the assigned area, if it causes damage to the other booth, they can get a warning or be disqualified.

4-5. Presentation

- 4-5-1. Judge will visit the booth and ask questions to each participant when visiting the booth. All audiences will be moved to designated sit. Time and order of judge's visit will be decided by organizers. Will be noticed to participants individually.
- 4-5-2. Each team should perform the presentation with actual robot.
- 4-5-3. Each team can show the premade video to judges in order to explain how it works in a special situation but these explanation time will be involved in their presentation time.
- 4-5-4. Judges can freely request or ask questions during the presentation or free exhibition. If participant shows insincerity during inquires, points can be deducted.
- 4-5-5. Each team can repair their robot in their booth, must be completed before free exhibition or presentation, if failed to repair 100%, participants can choose between 2 options, whether to continue their presentation in its imperfect condition or get penalty and get extra repair time.

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4-6. Call back evaluation

After the presentation, if judges want to see some particular teams again to ask more, they will have a call back evaluation with the teams.

5. Evaluation and Rank decision

5-1. Evaluation criteria

Judges will evaluate according to below criteria and will sum up the points to decide final rank.

5-1-1. National preliminary round evaluation criterion

Items	Contents of examination	Points
Problem solving	<ul style="list-style-type: none"> ① Does it contain the value of robots for problem solving? ② Can problem be solved by robots? ③ Have participants suggested his project after contrasting it with other existing robots? 	5/10/15/20/25
Creativity/ Research ability	<ul style="list-style-type: none"> ① Are research topics and ideas original? ② Is expressions creative and appropriate for students? ③ Does it show uniqueness of participants? 	5/10/15/20/25
Organization	<ul style="list-style-type: none"> ① Is there any problem with logical development? ② Is It the conclusion rational and reasonable? 	5/10/15/20/25
Excellence	<ul style="list-style-type: none"> ① Are the plans and data collected in accordance with the research? ② Is form of the poster and expression superb? 	5/10/15/20/25
Total		100

5-1-2. Free exhibition & Presentation evaluation criteria

Items	Contents of examination	Points
Topic Feasibility	<ul style="list-style-type: none"> ① Is manufactured robot related to the topic and is motive creative? ② Have you tried to express it from various angles? 	5/10/15/20/25
Problem solving Rationality	<ul style="list-style-type: none"> ③ Is there any problem with the logical development of design and fabrication? ④ Is the conclusion related to the problem rational? 	5/10/15/20/25

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Presentation & attitude for the questions	③ Is the presentation logical and communicative? ④ Is the answer logical and reasonable?	5/10/15/20/25
Demonstration & attitude during demonstration	③ Does the robot work properly for the topic? ④ Does participant have diligent attitude of demonstration?	5/10/15/20/25
Total		100

5-1-3. When aggregating the score, the highest and lowest scores are excluded from the final score.

5-2. Draw

If points are draw, rank will be decided from the following.

5-2-1. No.1: Result that has higher 'Topic Feasibility' point will have higher rank than below

5-2-2. No.2: Result that has higher 'Problem solved Rationality' point will have higher rank than below

International Robot Olympiad Committee