

General Terms and Conditions

The terms and conditions of the Competition are as follows:

1. Petrosains RBTX Challenge 2024 has 3 main categories which are Robo Sumo, Robo Tracer and Innovation with 8 sub-categories; Robo Sumo 500g RC, Robo Sumo 1kg, Robo Sumo 3kg, Green Heroes, Tech Marvels, Speed Rivals, Net Zero Carbon Emissions (NZCE) and Indigenous Culture & Technology. Each sub-category contains specific rules and regulations.
2. Brief descriptions of each category are as follows:

2.1 Robo Sumo

Robo Sumo is a sport that involves designing and programming a small robot to push its opponent out of a circular ring. The robots are equipped with sensors, motors, and other mechanical components that allow them to navigate the arena and react to their opponents. The aim is to create a resilient autonomous robot that can outmaneuver and outsmart its opponents, pushing them out of the ring while remaining inside itself.

2.1.1 Robo Sumo 500 g RC

Robo Sumo 500 g RC category challenged young innovators **aged 7 to 17 years old** to build, program and control a reliable and robust robot integrated with sustainable features capable of pushing its opponent out of the ring. The robot that remains inside the ring will be declared the Robo Sumo champion.

2.1.2 Robo Sumo 1 kg

Robo Sumo 1 kg category challenged young innovators **aged 10 to 17 years old** to build and program a resilient autonomous robot integrated with sustainable features which capable of propelling its opponent out of the ring. The robot that remains inside the ring will be declared the Robo Sumo champion.

2.1.3 Robo Sumo 3 kg

Robo Sumo 3 kg category challenged innovators **aged 10 years and above** to build and program a resilient autonomous robot integrated with sustainable features capable of propelling its opponent out of the ring. The robot that remains inside the ring will be declared the Robo Sumo champion.

2.2 Robo Tracer

Robo Tracer, also known as line following, is a technique used in robotics where a robot follows a line, usually a contrasting colour, that is marked on a surface. This is accomplished using sensors, such as infrared or optical sensors, that detect the contrast between the line and the surrounding surface. By continuously detecting the position of the line, the robot can adjust its movement to stay on the line. Robo Tracer is commonly used in industrial and manufacturing settings, where robots can be programmed to follow a specific path to move materials or perform tasks. It is also a popular application in educational robotics, as it is a simple and engaging way to introduce students to robotics and programming concepts.

2.2.1 Green Heroes

A forward-thinking and action-oriented teams challenge for **aged 7-12 years old** participants. The challenge is not only engaging participants in a meaningful way but underscores the significance of energy-efficient thinking, encouraging participants to consider how their choices can contribute to a more sustainable future.

2.2.2 Tech Marvels

A forward-thinking and action-oriented teams challenge for **aged 13 - 17 years old** participants. The challenge is not only engaging participants in a meaningful way but underscores the significance of energy-efficient thinking, encouraging participants to consider how their choices can contribute to a more sustainable future. AI is also incorporated in this category as to scaffold further the knowledge and skills among the participants.

2.2.3 Speed Rivals

A time-based challenge where teams compete to complete the course in the fastest time possible. Teams **aged 10 years old and above** are challenged to program a robot that can move on a line track (black on white) and pass through all obstacles. The robot which finishes the race in the fastest time will be declared the winner.

2.3 Innovation

Petrosains, continues to support the recommendations by the Malaysian Ministry of Education to strengthen STEM knowledge in alignment with Dasar Sains, Teknologi dan Inovasi Negara (DSTIN 2021 - 2030), the Malaysian

Education Development Plan 2013 - 2025, and the Malaysia MADANI framework; based on the core of Creativity and Sustainability. In this regard, Petrosains will continue to organize the Petrosains RBTX Challenge 2024 which has proven to enhance knowledge among the public on skills related to the Fourth Industrial Revolution, particularly to accelerate the adoption of innovation and technology.

2.3.1 Net Zero Carbon Emissions (NZCE)

The Innovation category aligns in continues support to global commitment to reduce its carbon footprint through its Nationally Determined Contributions (NDC) towards net zero carbon emissions (NZCE). As a wide range of technologies and approaches are required to reduce emissions, while investments and deployment of carbon-reduction technologies need to be intensified, innovators **aged 10 years old and above** are challenged to build a prototype, showcase and pitch their ideas and creations to respective judges during the Grand Finals.

2.3.2 Indigenous Culture & Technology (Closed category)

Integration of indigenous cultural elements into robotics and technology towards digital inclusion and community development while preserving traditional knowledge and ensuring environmental sustainability.

3. Teams consisting of participants residing in Malaysia are allowed to participate in any categories offered in this year's competition. However, participants from foreign countries except for those included in the United Nations Security Council Sanctions list website [Sanctions | United Nations Security Council](#) are allowed to participate in the following categories only:
 - a. Robo Sumo [500 g RC]: Aged 7 years to 17
 - b. Robo Sumo [3 kg]: Aged 10 years & above
 - c. Robo Tracer [Speed Rivals]: Aged 10 years & above
 - d. Innovation [NZCE]: Aged 10 years & above
4. Everyone is allowed to sign up for one team in one category only. Participants are not allowed to sign up for more than one team or category.
5. The number of participants for each team in this year's competition categories is as follows:
 - Robo Sumo [500 g RC, 1 kg, 3 kg]: maximum of 2 participants per team.
 - Robo Tracer [Green Heroes, Tech Marvels & Speed Rivals]: maximum of 2 participants per team.
 - Innovation [NZCE]: maximum of 4 participants per team including mentor and advisor.

- If all participants in a team are below 18 years of age, the team must be accompanied by a guardian (teacher/parent).
6. Registration is free.
 7. Petrosains Sdn. Bhd. (“Petrosains”) reserves the right at its sole discretion to change the duration of the competition period.
 8. Employees of Petrosains, its organizing committees, advertising and promotion agencies and their immediate family members are not eligible to participate in the competition. Immediate family members include spouses, parents, and children.
 9. Petrosains reserves the right at any time without prior notice to add, alter, modify, change, or vary the terms and conditions contained herein, wholly or in part at its absolute discretion and the Participants agree to be expressly bound by such additions, modifications, change or variations.
 10. Petrosains reserves the absolute right to disqualify any participant if Petrosains is of the opinion that the participant has been involved in fraud at any time throughout the Competition.
 11. The judges' decision in determining the winner shall be final and no appeals against the decision will be entertained.
 12. All participants involved in the Zone Qualifying (Category: Green Heroes, Tech Marvels, Robo Sumo 1 kg) and Grand Finals are required to be physically present at the event venue.
 13. Petrosains and its affiliates will not be responsible for any cost incurred, including those that may arise from the participant's involvement in the Competition.
 14. The winner of the Competition may be requested to participate in publicity events and/or campaigns to generate press coverage for the Competition and Petrosains. Petrosains shall be entitled at its sole discretion to quote statements made by the Participants in any press releases and press conferences relating to the Competition and/or Petrosains.
 15. By participating in this Competition, all participants agree to be bound by the terms and conditions and any decisions made by Petrosains.
 16. The prizes are not exchangeable, transferable, or redeemable for cash or any other form. Notwithstanding the above, Petrosains reserves the right to replace the advertised prize with other prizes of equal value, without assigning any reason or prior notification.

17. The Competition winners will be required to attend prize-giving ceremonies (if any) at their own cost and expense. If a winner is not able to attend the prize presentation ceremony, the participant shall nominate a representative who shall accept the prize on his/her behalf.
18. Participants expressly grant to Petrosains the right at its sole and absolute discretion, to use the names, photographs and video recordings of the participants and/or their representatives without obtaining any prior consent nor making any payment whatsoever to the Participants and/or their representatives for publicity purposes in any medium.
19. Petrosains shall not be responsible and/or liable for any physical injury, including death and damage to property of the Participant arising out of this Competition.
20. Petrosains shall also not be responsible and/or liable for any physical injury, including death and damage to property of any third party as a result of the conduct of the Participant.
21. Petrosains shall not be responsible and/or liable for any cost incurred to a participant by participating in this Competition.
22. No changes are allowed once registration is complete.
23. All terms and conditions may be amended or withdrawn at the discretion of the management of Petrosains and Petrosains RBTX Challenge 2024 at any time without prior notice.
24. Ownership of all documents and videos submitted for the purpose of Petrosains RBTX Challenge 2024 will solely belong to Petrosains. Petrosains shall have the right to edit, adapt, and modify the submission and shall use for any purpose that deems right. No part of the submitted document can be shared to any third parties or other competitors without prior permission of Petrosains.