



GRC EXPO

Rulebook



GRC EXPO Rules



1. Overview

“GRC EXPO” is a robotics competition where teams showcase their ability to develop innovative robotic solutions that address real-world challenges. Participants are encouraged to think creatively and utilize a wide range of technologies and approaches. The competition focuses on research, prototyping, engineering, and presentation skills.

2. Team Composition:

- Team Size : **3 : 5** people guided by a Coach.
- Teams will be divided into two age categories:
 - Discover: Ages **6 - 8** years .
 - Junior: Ages **9 - 14** years .
 - Senior: Ages **14 - 18** years .

3. Areas of Development:

1. **Research and Development:** Teams identify a real-world problem and propose an innovative robotic solution.
2. **Prototyping:** Transform ideas into a functional prototype that solves the identified problem.
3. **Technical Engineering:** Demonstrate engineering skills by using sensors, motors, and software to bring the solution to life.
4. **Innovation:** Projects should reflect originality and creativity.
5. **Presentation Skills:** Teams must effectively communicate their projects during a live presentation.

4. Themes

- **No predefined theme:** Teams can address any real-world problem of their choice. **Projects must address real-world challenges.**

5. Specifications

- Each team must bring **poster** for the project. The maximum size of the poster is **(100 cm width x 150 cm height)**.
- The poster should include the following details:
 1. **Project Name**
 2. **Key Points** : Highlight the main features and goals of the project
 3. **Basic Design Image** : A clear representation of the project's design
 4. **Functional Diagram** : A diagram explaining how the project works
 5. **Team Members** : Names and roles of the team members
 6. **Materials Used** : A list of materials and components used in the project
 7. **Project Benefits** : The advantages or potential impact of the project
 8. **Future Plan** : Next steps or future developments for the project.

Robot Type:

- No restrictions on the type of robot.
- Teams are free to design and build any type of robot that suits their project, including fully autonomous, semi-autonomous, or remotely controlled systems.
- Robots must be designed and developed by the team to solve a specific real-world problem.
- While there are no size or type restrictions, robots must be able to function safely within the competition environment.

Software and Programming:

- No restrictions on the software or programming language used.
- Teams can choose any software or programming language to control their robot.

6. Discover Category Specific Rules

Kits and Platforms :

- WeDo Kits and other basic LEGO Kits and Spike kits are allowed.

Themes

- **No predefined theme:** Teams can address any real-world problem of their choice. **Projects must address real-world challenges.**

Robot and Project Specifications

- Teams are encouraged to use simple sensors, motors, and LEGO components.
- Robots should be functional and demonstrate a basic understanding of mechanics and programming.

Presentation and Exhibition

- Teams must bring a **poster** as outlined in the general specifications.
- Each team will present their project in a **15-minute presentation**, including a demonstration of their robot.

Scoring Criteria (Specific to Discover Category)

1. **Creativity (30%):** How innovative and original the solution is.
2. **Technical Execution (20%):** How well the robot functions.
3. **Theme Relevance (20%):** How well the project aligns with the chosen theme.
4. **Presentation (30%):** How clearly and confidently the team explains their project and demonstrates their robot.

7. Competition Phases

1. **Research and Proposal:** Teams identify a problem and submit a proposal explaining their solution.
2. **Prototyping and Development:** Teams develop a working prototype that addresses the identified problem.
3. **Technical Skills:** Teams demonstrate the use of sensors, motors, and other components to make the robot function.
4. **Presentation:** Teams deliver a live presentation showcasing their project and a working demonstration of the robot.

8.Competition Day

-The presenting team will have:

1. **Ten minutes** to showcase their project, including a live demonstration of its functionality.
 2. **Five minutes** to respond to questions from the judges.
- The project must remain displayed at the exhibition stand throughout the entire event day, allowing both judges and other participants to view it.
- During the exhibition day, **two to three judging** may visit the team at different times for evaluation.

9.Scoring Criteria

1. **Project Proposal (10%)**: Clarity and relevance of the problem and solution.
2. **Research and Development (20%)**: Depth of research and understanding of the problem.
3. **Prototyping and Technical Engineering (30%)**: Functionality and technical execution of the robot.
4. **Innovation (20%)**: Originality of the solution.
5. **Presentation Skills (20%)**: Ability to communicate the project clearly, including a live demonstration.

10.Submissions

Before the competition day:

- Teams must submit a technical report summarizing their research, development, and technical details.
- Teams must submit a project abstract.
- Teams must submit a digital copy of their presentation in PowerPoint format.
- Video demonstrating the project work. Video duration should not exceed two minutes



Good Luck