

**Robotics Club**

Board of Science and Technology

Indian Institute of Technology, Ropar

**General Championship (GC) Rulebook: Academic Year 2024-25**

### **Introduction**

We are thrilled to announce the return of the General Championship (GC) for the academic year 2024-25! This year’s GC promises to be more exciting, inclusive, and memorable, with a range of events and activities designed to enhance your hostel life and showcase your talents. Whether you are a returning participant or a first-time entrant, this is your opportunity to shine and contribute to your hall’s success.

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**Inverted Walker**

**Overview**

Design and construct an **"Inverted Walker"** using a single degree of freedom linkage to traverse a rope. The objective is to create the fastest and most efficient walker while adhering to the guidelines and specifications.

### **Team Formation**

Two teams can participate per hall with a maximum of 4 members.

### **Points**

* **1st place:** 1000 points
* **2nd place:** 800 points
* **3rd place:** 500 points
* **Participation points:** 100 points per team

### **Timeline**

* **08-01-2024 (10:00 AM):** Start of Phase I
* **10-01-2024 (11:59 AM):** Phase I Submission
* **10-01-2024 (04:00 PM):** Announcement of Phase I Results
* **10-01-2024 (04:00 PM):** Distribution of Components and Start of Phase II
* **12-01-2024 (3:00 PM ) Venue M2 :** Phase II Submission and Presentation

### **Components to be Provided**

* 1x Dual Shaft Motor
* Microcontroller (Arduino or equivalent)
* Breadboard and Jumper Wires
* Access to machines (cutting, printing, etc)

*Note:* Any damage to the provided components will result in disqualification and other penalties.

### **Task**

Design and construct a device that:

* Utilizes a single degree of freedom linkage to traverse a rope.
* Ensures stability and safety during movement.
* Completes the course in the shortest possible time.

### **Evaluation Criteria**

#### **Phase I: Ideation**

Participants must submit a concept document including:

1. **Abstract:** A brief overview of the proposed solution.
2. **Technical Description:** Details of the design, methods, and resources to be used.
3. **Challenges and Solutions:** Identification of potential challenges and strategies to address them.
4. **Impact:** Real-world applications and benefits of the design.

**Scoring:**

* **Originality:** 25%
* **Technical Feasibility:** 40%
* **Clarity and Completeness:** 25%
* **Potential Impact:** 10%

The **top 3 teams** from this phase will advance to Phase II.

#### **Phase II: Implementation**

Teams will build their designs and demonstrate functionality. Submissions must include:

1. **GitHub Repository:** Containing the code, circuit design, and detailed documentation.
2. **Demo Video:** Demonstrating the working of the walker.

**Scoring:**

* **Performance (Speed):** 60%
* **Design and Stability:** 20%
* **Innovation and Creativity:** 20%

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### **General Guidelines**

1. **Deadlines:** Late submissions will incur penalties of 10% for up to 30 minutes. Submissions beyond this will not be accepted.
2. **Integrity:** Plagiarism or tampering with the components will lead to disqualification.
3. **Judging:** The organizers reserve the right to modify rules and judging criteria at any time.

For queries please contact the undersigned

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