Navonmesh 2024

Unlocking Innovation and Entrepreneurial Spirit

ROBOT RACE RULEBOOK

February 2025

https://navonmeshfest.com

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ABOUT NAVONMESH 2025

Navonmesh 2025 -
Central India's Biggest Innovation Carnival!

A flagship initiative by AIC-RNTU, this is more than just an event — it's a celebration of entrepreneurship, innovation, technology and the relentless pursuit of success.

The overall event consists of a lineup of competitions, dynamic speakers, engaging panel discussions, hands-on workshops, and networking opportunities bringing all the stakeholder of Startup, Innovation ecosystem under one roof.

Date: 25th - 26th March 2025

Venue: Scope Global Skills University, Bhopal (M.P.)

COMPETITIONS

- Young Inventors Fair
- Innomaker: Product Showcase
- PlanX: Business Plan Battle
- Binary Battle: Software Hackathon
- Ad Mad Show
- ViralVerse: The Creator Challenge
- Robo Warriors
- First Cheque
- Startup Expo
- Keynote Sessions
- Learning Sessions
- Navonmesh Awards
- Shodh Shikhar

ABOUT AIC-RNTU FOUNDATION

AIC-RNTU Foundation is playing a pivotal role in developing the entrepreneurial ecosystem in central India. It is Central India's leading name in the Incubation space and has been working to support the innovation & entrepreneurship across all the functions viz.mentoring, handholding, industry connect, workshops, investor connects, events, competitions, new age labs & dedicated office space etc. We have 130+ incubated startups from different sectors and successful corporate partnerships with over 60+ companies, 35+ academic tie-ups and diverse portfolio of 80+ Mentors.

Since inception, We have seen the ecosystem grow rapidly in the country and as well as in Central India. Madhya Pradesh moved up from an Emerging Startup Ecosystem to Aspiring Leader in Startup India Ranking; reflecting the growing culture and initiatives in the state to support Startups in their Journey. AIC-RNTU has supported 500+ startups till date with itsvarious activities and initiatives; engaging all the stakeholders- Startups, Students, Investors, Mentors, HNI's and Academicians. We have organised 150+ trainings/workshops and 280+ training & events to promote innovation and entrepreneurship amongst stakeholders of the ecosystem and have reached even remote areas in scout of startups and budding entrepreneurs to support them via different means and services. AIC-RNTU Supported by Atal Innovation Mission, NITI AAYOG, Department of Science & Technology (DST), Meity, iDEX- MINISTRY OF DEFENCE, Department for Promotion of Industry and Internal Trade (DPIIT), and MP Startup Center .

We have been covered more than 280 times by prominent media houses like Dainik Bhaskar, Patrika,Hindustan Times Doordarshan, Yourstory, Inc42 and more. AIC-RNTU Foundation has been awarded as BEST INCUBATOR- Startup Program at HS.X by Headstart Network Foundation. In May 2021, AIC-RNTU was also awarded as "Incubator of the Year" at the Women Power Summit & Awards 2021 organized at BSE (Bombay Stock Exchange) International Convention Hall, Mumbai by Billennium Divas.

ROBO WARRIOR:
ENGINEER THE WARRIOR IN YOU!

Robo Warrior is an exciting event featuring two thrilling competitions: **Robo Fight** and **Robo Race**. Designed for UG/PG students, it challenges participants to showcase their robotics skills in combat and speed, testing creativity, strategy, and engineering in a high-energy, competitive environment.

Total Prizes under Robo Warrior: ₹ 1,00,000

ROBO FIGHT

In the Robot Fight Competition, teams design and build robots to battle in an arena, with the goal of outsmarting and overpowering their opponents. Robots are equipped with weapons, shields, and various tactics to disable or destroy the other robot. The competition tests the durability, creativity, and strategy of the teams, with robots needing to withstand intense physical confrontations.

ROBO RACE

The Robot Race Competition challenges teams to build robots that can race along a track, navigating obstacles and completing specific tasks. Speed, precision, and problem-solving are crucial as robots compete to reach the finish line first. Teams program their robots to follow the course accurately while dealing with turns, ramps, and unexpected challenges. The competition highlights both engineering skills and programming expertise.

This rulebook outlines the necessary instructions and guidelines for teams participating in the Robo Race component of the Robo Warrior Competition.

WHY ROBO RACE ?

Skill Development

Enhance problem-solving, programming, and engineering skills by building and controlling combat robots.

Teamwork

Collaborate with peers, improving communication and team-building abilities.

Innovation

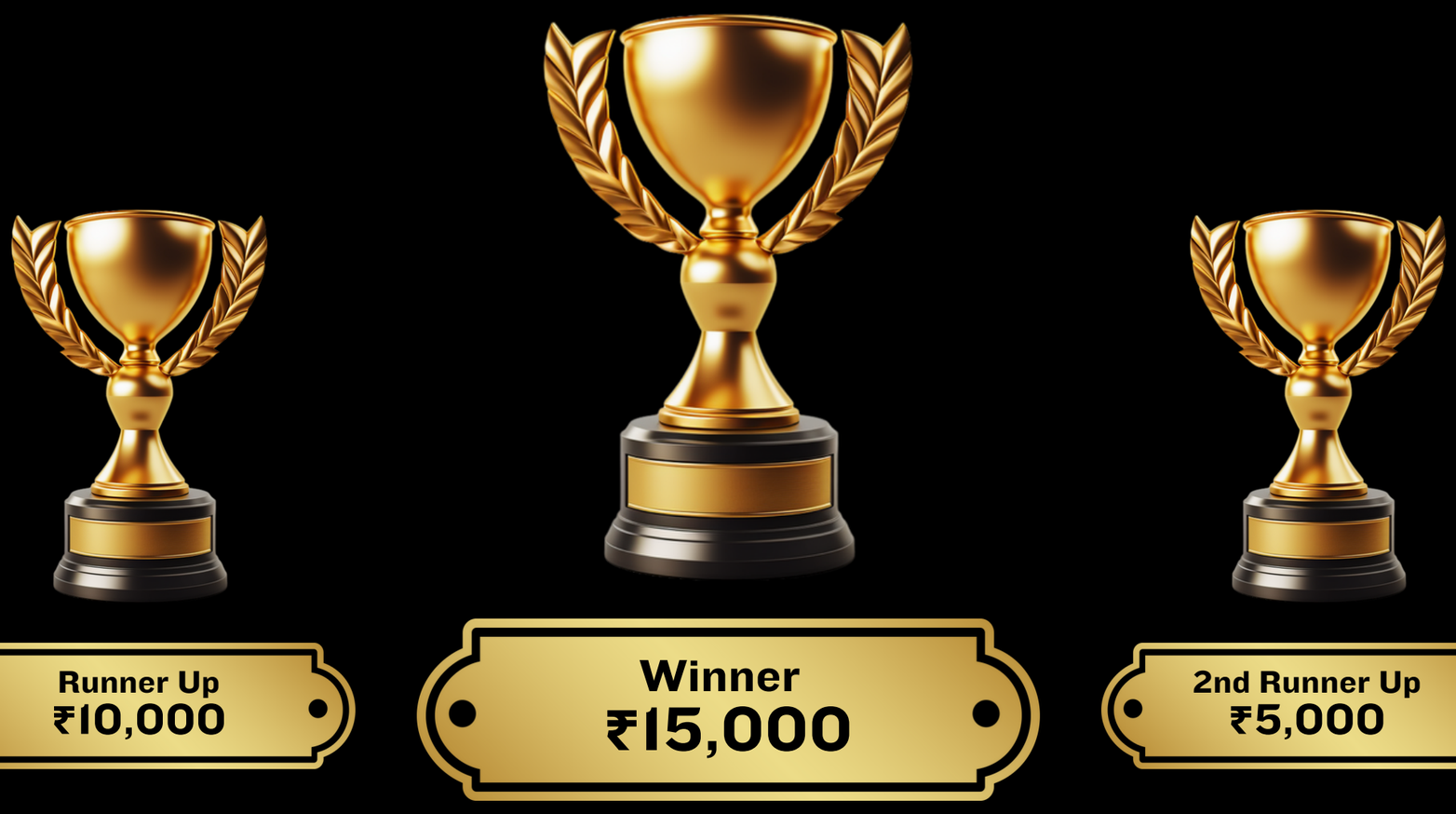
Design and implement creative robotic solutions for intense battles.

Competitive Edge

Stand out to potential employers with practical robotics experience.

Excitement

Experience the thrill of live robot battles and the adrenaline of competition.



Runner Up
₹10,000

Winner
₹15,000

2nd Runner Up
₹5,000

ADMINISTRATIVE GUIDELINES

GOOD ENGINEERING PRACTICES

Robots entering into Navonmesh 2025 - Robo Warrior are expected to be designed and fabricated in accordance with good engineering practices.

OFFICIAL ANNOUNCEMENTS AND COMPETITION INFORMATION

Teams are required to read and keep themselves updated with the articles/information posted on the website homepage/social media pages of AIC-RNTU/any other communication channel. It is the responsibilities of participants to read and follow all the announcements published by organizing team and Robo Warrior rules committee.

RESERVATION OF RIGHTS

Rules are subject to changes at the discretion of the Management/Organizers.

PROTESTS APPEALS

Any team wishing to file a protest must do so immediately after the fight in question. Protests must be submitted in writing to the event organizers, detailing the nature of grievance. The jury will review all protests and make a final decision. This decision is binding and cannot be appealed.

OFFICIAL LANGUAGES

The official language for documentations relating to any part of the competition is English. For discussions English and Hindi can be used.

ELIGIBILITY

- **Age-limit:** Participants must be between 17 to 25 years old.

- **Student Status:** Only students enrolled in UG/PG courses of UGC/area approved college

- **Valid ID proof:** Participants must present either a government.-issued ID or a school/college ID for verification.

- **Team Size:** Each team must have a minimum of 2 members and a maximum of 4 members are allowed to participate in Robo-fight.

- **Cross-college Teams:** Teams can include members from different colleges, but only up to 30% members can be from other colleges.

HOW TO APPLY?

- **Apply here:** https://navonmeshfest.com/robo_form.php

- At the time of application, students need to upload a presentation covering
  (i) Team Name
  (ii) Tentative Design of Robot
  (iii) List of Components
  (iv) Safety Features
  (v) Highlight Innovation (if any)
  (vi) Budget (Robot cost should not exceed INR 5000)
  (vii) Team Details including Mentor/Faculty Advisor

- The teams will have to bring their robots for the battle physically at SGSU on the event dates, i.e., **25th-26th March 2025**.

IMPORTANT DATES

Registrations Start	10th February 2025
Registrations Closing	25th February 2025
Evaluation Rounds	25th March 2025
Final Robot Race	26th March 2025

FLOW OF EVENTS (POST REGISTRATIONS)

Technical Rounds (Day I)	• Document Validation • Design Inspection (DI) • Mobility Inspection (MI) • Battery Inspection (BI)
Racing Rounds (Day 2)	• Complete the track in least time and minimum penalties

DAY 01

TECHNICAL ROUNDS

DOCUMENT VALIDATION

The participating teams need to carry the following documents to the event:

- **Parental/Local Guardian self-Declaration:** Signed consent forms from parents or local guardians, and a self-declaration from signed by each participant (Format Attached as Annexure I).

- **Terms & Conditions:** A signed agreement confirming that participants agree to abide by the event rules and regulations (Format Attached as Annexure 2).

- **Aadhar Card & College ID:** Copies of Aadhar card and college ID for each participant.

- **Component List:** A detailed list of all components used in the construction of the Robot including part numbers and descriptions.

- **Bills/Invoices of Material:** A cost breakdown of all components used, with a total cost not exceeding Rs 5,000.

DESIGN INSPECTION

- **Minimum Clearance** – The robots must have a min. ground clearance of **20 mm**.

- **Dimensions** – The outer robot's dimensions must not exceed **200 mm (L) x 200 mm (B) x 200 mm (H)**. This is subject to a maximum allowance of 10%.

- **Maximum Weight** - The robot's weight must not exceed **5 kg**.

- **Free-parts** - Any parts that are not securely attached to the robot are not allowed. All components must be firmly fixed to ensure safety during the competition. Any parts that may endanger the participant /jury audience as flagged on the baris of the jury decision will not be allowed.

MOBILITY INSPECTION

- **Path Test** - The robot must be able to navigate a designated path medium the track width test its mobility and stability live marking will be applied per foul.

- **Controller Range** - The robot's controller must have a range of 5ft to ensure it can be operated from a safe distance.

- **Fail-safe Mechanism** - The robot must have a fail-safe mechanism that can be triggered in case of an emergency. If the robot does not have a fail-safe mechanism, it will be disqualified.

BATTERY INSPECTION

- **Fire Safety Measures -** The robot must have adequate fire safety measures to prevent battery-related fires.

- **Impact Safety Measures -** Measures must be in place to ensure the battery remains same safe and intact during impacts.

- **Battery Type -** Batteries with Li-Ion chemistry are allowed for use in the robot.

CORRECTION TIME

These would be a time allocation of 2 hours for each team post evaluation by the jury and teams have to do necessary changes in these 2 hours. A secondary evaluation will be done by jury, then only eligible robots will be considered for fight.

DAY 02

RACING

POINT SYSTEM
(PRE-RACE EVALUATION POINTS)

Point Category	Activity	Max. Points Per Jury	Max. Points from Activity	Details
Document Validation	All documents as listed to be provided by the team	90	270	Documents Required (disqualification filter): a. Parent/Local Guardian self-declaration b. Terms & Conditions Acceptance Declaration c. Aadhar Card & College ID d. Letter of Recommendation from College/university e. Component List f. Budget and Invoices g. Project report with Photos
Design Inspection (DI)	Physical Inspection or as decided by Jury on-spot	50	150	Checking for: a. dimesions b. clearances c. weight limit d. weapon safety (disqualification filter) e. no free moving parts, and any other parameters according to jury
Mobility Inspection (MI)	Physical Inspection or as decided by Jury on-spot	30	90	Following Tests will be done: a. Path Test b. Controller Range Test c. Fail-safe Mechanism (disqualification filter)
Battery Inspection (BI)	Physical Inspection or as decided by Jury on-spot	30	90	Focus on: a. fire safety measures b. impact safety c. battery type
Maximum Available Pre-Fight Evaluation Points			**600**	

POINT SYSTEM (IN-GAME POINTS)

The In-game points will be awarded as per the following formula:

((Tm-Tc)*50)-((nh*10+ns*25+nl*5))

where,

Tm - Maximum Time or Cut-off (in seconds) [to be revealed on event day]
Tc - Time to complete (in seconds)
nh - No. of hand touches
ns - No. of times barriers skipped
nl - No. of times marking lines touched

A sample calculation for the in-game points is given below:

Parameter	Maximum Time (Tm)	Time to Complete (Tc)	No. of hand touches (nh)	No. of times barriers skipped (ns)	No. of times marking lines touched (nl)	Final Score
Sample Value 1	120	100	2	1	2	1790
Sample Value 2	120	119	1	1	2	-60
Sample Value 3	120	80	1	1	2	3840
Sample Value 4	120	119	0	0	1	95

The final results will be calculated as:

Total Points = P (p) + P (in-game)

where,

P(p) - Pre-race Evaluation Points
P(in-game) - In-game Points

In case of a tie, tie-breaker rounds will be played.

FREQUENTLY ASKED QUESTIONS

Q. Is there any registration fees?

A. No, the competition is FREE to participate.

Q. Is it required for all the team members to register themselves?

A. No, anyone team representative can register for the team and mention the team details in the presentation to be uploaded. If more than one teams are participating from same college, atleast one member of each team needs to register.

Q. Is there any participation certificate?

A. Yes, all participants irrespective of their rank in the competition will get a participation certificate. However, participants who just register and do not show up at the competition are not eligible to receive any certificate.

Q. I want to register my team but I don’t know how to make a robot. What do I do?

A. It’s ok if you currently don’t know how to make a robot. If you are keen to learning, we can support you through our AIC-RNTU advanced prototyping lab. You, along with your team can come and make your robot in our lab where you’ll have access to other students participating in the competition and the equipment needed to make the robot.

Q. If I am taking any assistance from AIC-RNTU lab for making robot, is it paid?

A. No, it’s absolutely FREE. However, the charges of parts and raw material need to be taken care of by the participating team.

Q. How can I take manufacturing support from AIC-RNTU?

A. You can reach out to us over call/Whatsapp on 7974513836.

INDIVIDUAL DECLARATION

Annexure I: To be signed by all participants individually

I, the undersigned, hereby declare that I am voluntarily participating in the **Robo Warrior** competition, organized under the **Navonmesh 2025** event. I acknowledge that I am aware of the inherent risks involved in this robot fighting competition, including but not limited to physical injury, property damage, and other potential hazards arising from the participation in this event.

I fully understand the nature of the competition and take full responsibility for any and all risks that may arise during my participation, including but not limited to:

- Damage to personal property or other participants' property
- Injury to myself or others
- Loss of equipment or related materials
- Any other unforeseen risks associated with the competition

I agree to hold harmless the event organizers, sponsors, and all related personnel from any liability arising from participation in this event. I further understand that I am solely responsible for ensuring the safety, security, and proper functioning of my robot during the competition.

In the case of a minor participant:

If I am signing on behalf of a minor, I, the parent/guardian, affirm that I have read and understood the above declaration and consent to the minor's participation in the Robo Warrior competition, taking full responsibility for any risks associated with their participation.

Details of Participant:

- Name of Participant: _____
- Aadhar ID of the Participant: _____
- Age of Participant: _____
- Robot Team Name: _____
- Contact Number: _____
- Emergency Contact Number: _____

Signature of Participant (if adult):

Signature: _____

Signature of Parent/Guardian (if minor):

Signature: _____
Name of Parent/Guardian: _____

Date: _____

TEAM DECLARATION

Annexure 2: To be signed by team captain

Declaration of Agreement to Terms and Conditions

I, _____, in my capacity as the team captain of _____, hereby acknowledge and agree to the terms and conditions associated with **Robo Warrior Event** under **Navonmesh 2025** on behalf of all team members. By registering and participating in this event, I confirm that all team members have read, understood, and accepted the event's rules, guidelines, and regulations outlined in the Terms and Conditions.

I understand that failure to comply with these terms may result in the disqualification of our team from the event. As team captain, I take full responsibility for ensuring that all team members abide by the instructions and regulations set forth by the event organizers.

I also grant consent for the event organizers to use any photographs, videos, or other media captured during the event for promotional purposes, unless otherwise stated.

By signing below, I confirm my acceptance and agreement to the Terms and Conditions on behalf of the entire team.

Team Captain's Name: _____

Team Name: _____

Signature: _____

Date: _____

Navonmesh
2025

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https://navonmeshfest.com