Channabasaveshwara Institute Of Technology

(Affiliated To VTU, Belgaum & Approved By AICTE, New Delhi)

NAAC Accredited & NBA Accredited (UG - CSE, ECE & ISE)

Gubbi, Tumkur - 572216, Karnataka

2026

KNEW

KNOWLEDGE NETWORKS

GENERAL RULES AND REGULATIONS

- Each Participant Must Bring Bonafide Certificate & Identity Card From Their Respective Institution.
- Accommodation Will Be Provided On Request (Pay And Use) For The Outstation Participants On Prior Intimation
- Transportation Facility Will Be Provided (Only In Specified Timings) From Tumkur (4.8 K. Road)

EVENT RULES AND REGULATIONS

1. Technical Paper Presentation:

- Each Paper Can Have Maximum Of Two Authors.
- Paper Must Be Submitted In IEEE Format.
- The Content Of The Paper Should Not Exceed More Than 6-Pages.
- Selected Papers Will Be Given To 10 Min For Presentation And 02 Min For Discussion/Queries Respectively.
- Selected Papers Must Be Submitted In Hard Copies Of The Paper To Be Submitted At The Time Of Presentation.
- Session Chair's Decision Will Be The Final.

2. Technical Poster Presentation:

- Poster Must Be Presented By An Individual Or A Group Of Two (Maximum).
- Poster Should Cover The Entire KEY POINTS Of The Work.
- The Ideal Poster May Be Designed To Provide A Brief Overview Of The Work, Initiate Discussion And Questions.
- The Poster Should Be Prepared On Chart Paper. Also Be Used Rather Than Power Point Whenever It Is Possible.
- Any Drawing Board Will Be Provided At The Venue.
- Participants Should Make Their Own Arrangements For Other Requirements Like Push Pins, Velcro/Cellophane Tapes Etc.
- Committee / Judge Decision Will Be The Final.
- Only One Poster Per Participant Is Allowed In The Event.
- All The Authors For The Poster Presentations Need To Present Their Topic Orally.
- The Poster MUST NOT Be A Commercial/Product Sales Poster.

3. Code Debugging & On-Spot Programming:

- It Is An Individual Participant Event.
- The Participant Has To Clear Prelims Before Going For Main Contest.
- Contest Will Be Conducted For One Hour.
- Winners Will Be Chosen Based On Approach Towards Problem Solving / Debugging The Given Code.
- Only 'C' Language Has To Be Used For Programming Under Linux Environment.
- Committee / Judge Decision Will Be The Final.

4. Hobby Project Exhibition:

- A Team Can Have A Maximum Of 3 Members.
- Teams Will Be Given A Space To Set Up Their Model/Design At The Venue For Judging.
- Students Can Be Asked To Display The Poster Based On Their Project Work.
- Participants Should Bring All Their Requirements Such As Laptop, Power Supply Adaptors And Other Accessories Required To Demonstrate.
- Basic Requirement [E.G] Electric Power Supply Of 230V AC Will Be Available.
- The Decision Of The Judges Shall Be Treated As Final And Binding On All.

5. Circuit - Debugging:

- It Is An Individual Participant Event.
- The Participant Has To Clear Prelims Before Going For Main Contest.
- Contest Will Be Conducted For One Hour.
- Participants May Be Asked To Draw A Write Up On The Detailed Diagnosis Process.
- Winners Will Be Chosen Based On Approach Towards Analyzing, Diagnosing / Debugging The Given Circuit.

6. CAD Modeling:

- Maximum 1 Participant Per Team.
- PDF Drawing Will Be Given At The Time Of Competition.
- Points Are Noted For Drafting, Detailing, Dimensioning And Overview.
- The Final Result Will Be Judged On The Basis Of Completeness And Optimum Time.

7. Concrete Vision Bi-Crack The Code

1. **Objective**: Encourage Students To Apply Machine Learning (ML) Or Convolution Neural Networks (CNN) To Classify Cracked Vs. Non-Cracked Concrete Surfaces.
2. **Problem Statement**: Build A Model That Can Automatically Classify Concrete Surface Images As Either "Cracked" Or "Non-Cracked." Participants Can Use Traditional ML Techniques (SVM, Random Forest) Or Deeplearning (CNN). Transfer Learning
3. **Rules And Guidelines**
   - Each Team Can Have Max 4 Students
   - Cross-Disciplinary Teams (E.G., Civil + Computer Science) Are Encouraged To Promote Collaborative Learning.
   - Maximum Of Teams Allowed For Event Participation (First Come First Serve).
   - Allowed Frameworks: TensorFlow, Keras, Pytorch, Scikit-Learn.
   - Pre-Trained Models Are Permitted.
   - Computing Environment (Only Google Colab Or VS Code Or Jupyter Notebook)
   - Submission Must Include:
     - Source Code (Ipynb)
     - Brief Report (Problem Approach, Model Used, Accuracy).
4. **Infrastructure Needed**
   - GPU-Enabled Systems (Google Colab, VS Code)
   - Dataset Hosted On Google Drive
   - Submission Via Google Form
5. **Dataset**: The Competition Dataset Will Be Provided By The Organizers. It Will Include Images Of Concrete Surfaces Labeled As "Cracked" And "Non-Cracked."
6. **Evaluation Criteria**
   - Model Accuracy And Performance
   - Approach And Methodology
   - Innovation And Creativity
   - Report And Presentation

PROBLEM STATEMENT

Participants must build a self-operating, remotely controlled robot, either wired or wireless, to navigate a track filled with obstacles and timing barriers in the shortest possible time.

OBJECTIVE

Design and build a robot that can successfully complete the obstacle track, demonstrating control, durability, and speed while adhering to the rules and constraints.

GAMEPLAY

- The robot begins at the starting line, and the timer starts as soon as it moves.
- The robot must stay on track. If it moves off course, it must restart from the last crossed checkpoint within the timer continues running.
- Skipping an obstacle incurs **30 seconds penalty points.**
- The race ends when the robot crosses the finish line, at which point the timer stops.
- Scoring and penalty details will be disclosed on the day of the event.

PENALTIES

Skip an obstacle	+30 seconds
One wheel out of track	+5 seconds
Entire robot out of track	+20 seconds
Manual intervention (hand touch) – 1 time	+10 seconds
Restart after 3 minutes allowed (max 1 times)	

TRACK SPECIFICATIONS

- Single start and finish line
- Surface: Flat, clearly marked lines
- Various obstacles will be present to slow down the robot's movement
- Challenging zones with grass, oil, sand, and water to test robustness
- Width: Between 1 and 1.5 meters

ROBOT SPECIFICATIONS

MAX DIMENSIONS	MAX WEIGHT	MAX VOLTAGE
30 × 30 × 30 cm	3 kg	12 V
(±10% tolerance)		(across any two points)

Control: Wired or wireless

Sensors: Not restricted, or are permitted

Motors: Not restricted, or are permitted

Wired or Wireless (Bluetooth) permitted

Disclosure of engine combined

Power: Max voltage between any two points 12V

Power may come from a 12V battery on the robot or a stationary power source via cord

Spare batteries must be carried by the team. Competition due to power failure.

RULES AND REGULATIONS

- Each team can have up to 4 members.
- Two team members will be allowed as the robot handler, responsible for controlling the robot during the game.
- Only the handler is permitted to enter the track for repairs or disqualification.
- Deliberate interference with other robots or damaging the arena will result in disqualification.
- All decisions regarding scoring, gameplay, timing, and participation made by the organizing committee are final.
- Teams must respect the referee's calls and judgments.

OBJECTIVE

The goal of **ROBO-SUMO** is to design and build an autonomous or remote-controlled robot that can compete in a sumo-style match by pushing the opponent's robot out of the circular arena while adhering to the specified rules and boundaries.

ARENA SPECIFICATIONS

- The arena features a circular plywood platform with a diameter of 2 meters
- A white border will assist sumo robots in navigation
- The platform is slightly elevated from the base to clearly distinguish when a robot has been pushed out.

ENTANGLED **NOT ALLOWED**

MATCH RESTARTS

ROBOT SPECIFICATIONS

MAX WEIGHT	MAX SIZE
3 KG (±2% TOLERANCE)	30 × 30 × 30 CM (±5% TOLERANCE)

MAX VOLTAGE	CONTROL TYPE
12 V (across any two points)	**WIRED / WIRELESS**

- Robots must be autonomous or remote-controlled via a standard 1.5 GHz, or ready-made components.
- Electrically powered only (no IC engines).
- Battery on board or stationary power source (wired).
- No spare batteries to prevent disqualification.
- Max (for wired bots) must be long enough to cover the entire arena and reach the edges.

RULES AND REGULATIONS

1. TEAM COMPOSITION

Each team must have **1 to 4 members.** Substitution is allowed only by currently enrolled college students.

2. MATCH FORMAT

Each match consists of two rounds.

- In case of a tie, an additional 1-minute round will be conducted.

3. SCORING SYSTEM

- Winning team gets **1 point**, losing team gets 0 points.
- To win, a robot must push the opponent completely out of the arena.
- The match will be considered a tie until it is fully off the platform (hanging over the edge does not count).
- The robot remaining on the arena at the end of the round is awarded the point.
- If both robots are pushed out of the arena (e.g., jumping out), but we will be disqualified and the opponent will be declared the winner.
- If both robots fall, the one that touches the ground last wins the point.
- If a robot becomes disabled or immobile, the opponent wins the point.
- If no winner is decided within the given time, a 2-minute overtime round will be played. If still take place, where the first point wins the match.

ROBOT RESTRICTIONS

- If robots remain **entangled for more than 10 seconds,** the judge will restart the match from the initial position.
- Entanglement is defined as robots locked together without making significant progress toward the arena's edge

CONDUCT & FAIR PLAY

- Participants must follow the rules and judges' decisions.
- Misbehaviour may lead to disqualification.
- Robots or participants attempting deliberate interference, damage, or tampering of the opponent will be disqualified.

AUTHORITY OF ORGANIZERS

- Event coordinators have the right to modify rules on the spot if necessary.
- All decisions regarding penalties, scoring, and participation made by the organizing committee are final.

MATCH CONTROL

- The match can be stopped, resumed, or ended only by a judge's and the Coordinator's announcement.

OBJECTIVES

Teams compete to score goals by maneuvering a ball into the opponent's net using their robots. The game is typically played in a knockout tournament format, where the winning team advances to the next round.

ARENA SPECIFICATIONS

BOT SPECIFICATIONS

SIZE	WEIGHT
30 × 30 × 30 cm (+5% tolerance)	3 KG (+5% tolerance)

Control: Wired or wireless. If wired – cable must be at least 4m long and tensile.

Power: Maximum of 12V DC at any time. Only batteries operated robots are permitted. Battery voltage will be verified at the motors

Motors: Only electric motors allowed. IC engines or compressed air mechanisms are prohibited.

Construction: Pre-built RC cars or ready-made chassis are not allowed. Robot must be designed and assembled by the team.

Mechanism: Robots may use push or flick mechanisms for the ball. Suction or adhesive-based holding methods are not permitted.

Technical inspection: Each robot must pass inspection at least 30 minutes before its match.

MATCH FORMAT

- **Tournament style:** Knockout format.
- **Match Duration:** 3 minutes per match.
- **Eliminations:** Semi-finals and Finals may have different durations.
- **Tiebreakers:** Decided by sudden-death or overtime rounds.

GAMEPLAY RULES

- The match begins with robots in designated zones, referee signals start.
- Teams must maneuver the ball using robots while avoiding violations.
- Intentionally blocking, damaging or interfering with opponents is not allowed.
- A goal is counted only if the ball fully crosses the goal line after scoring game restarts from the center.
- **Technical timeouts**, allowed for minor repairs (limited to 1 minute per game).

JUDGING & FAIR PLAY

- The team with the most goals at the end of the match wins.
- In case of a tie, extra time or penalty-based decisions may be used.
- Referee's decisions are final regarding goals, penalties, and match duration.

OBJECTIVE

- Robots will be positioned at the starting point, and the timer starts when the bot moves.
- The timer continues until the robot reaches the finish line.
- Each team is allowed one trial run round, including qualifications.
- If disturbed by a human (partially 4 seconds per touch).
- A robot must restart if:
  - It fails to start within 1 minute after pressing the start button.
  - It moves off the track.
  - The referee orders a restart.

CHECKPOINTS

- Checkpoints will be placed along the track.
- If a robot fails to reach a checkpoint, it must return to the previous one.
- If it fails again, participants may skip the checkpoint at the cost of a 20-second penalty.
- Additional checkpoints or rules may be announced on the day of the event.

ROBOT SPECIFICATIONS

Operation	Fully autonomous (no human intervention).
Dimensions (with tolerance)	
Width	200 mm
Length	200 mm
Height	200 mm
Maximum weight	1 kg
Starting mechanism	Must be started manually using a start button.
Restrictions	Use of pre-programmed Logic gates and pre-assembled microcontrollers prohibited.
Power	Max voltage between any two points 12V.
	Power may come from a 12V battery on the bot or a stationary power source via cord.
	Spare batteries must be carried by the team. Competition due to power failure.

TRACK SPECIFICATIONS

- The track will be made of a flexible sheet with contrasting lines.

- The course will include:
  - Acute, obtuse, right angles and curves.
  - Discontinuities at certain points.
- Checkpoints will be placed at key locations for progress tracking.
- The track layout will be revealed on the event day.