

The Annual Tech-Fest of GEC, Vaishali

VISION'25

13th- 14th Sept 2025

Truss Bridge Competition

OBJECTIVE:

Participants must design and construct a truss bridge using popsicle sticks that can support the maximum possible load while adhering to design and material constraints. The competition evaluates both engineering design and structural performance.

TEAM:

- Each team must consist of 2-4 players.
- All players must be students of the same or affiliated institute.
- A Participant cannot be a member of more than one team.
- One team member must act as captain and will be the only point of contact with organizers.



RULES:

1. Each team must design and build a truss bridge using only allowed materials.
2. Bridge must be built before the competition day and presented for inspection.
3. Design must be original and must not copy pre-existing bridge templates.
4. During testing, load will be applied at the center of the bridge span.
5. Only one attempt per team is allowed during the load test.
6. Teams must explain their design concept during a short oral presentation (2 minutes).
7. Teams are judged on strength-to-weight ratio, design, and aesthetics

CONSTRUCTION RULES:

- Only materials allowed:
 - Standard-sized popsicle sticks (flat, 11.5cm x 1cm approximately)
 - Fevicol/White PVA glue only (no epoxy/super glue)
- Max number of sticks: 120
- Bridge must be free-standing, no adhesives/tape to support structure during load test.
- No reinforcement (e.g. threads, wires, nails) allowed.
- The bridge deck must be flat to allow load application.

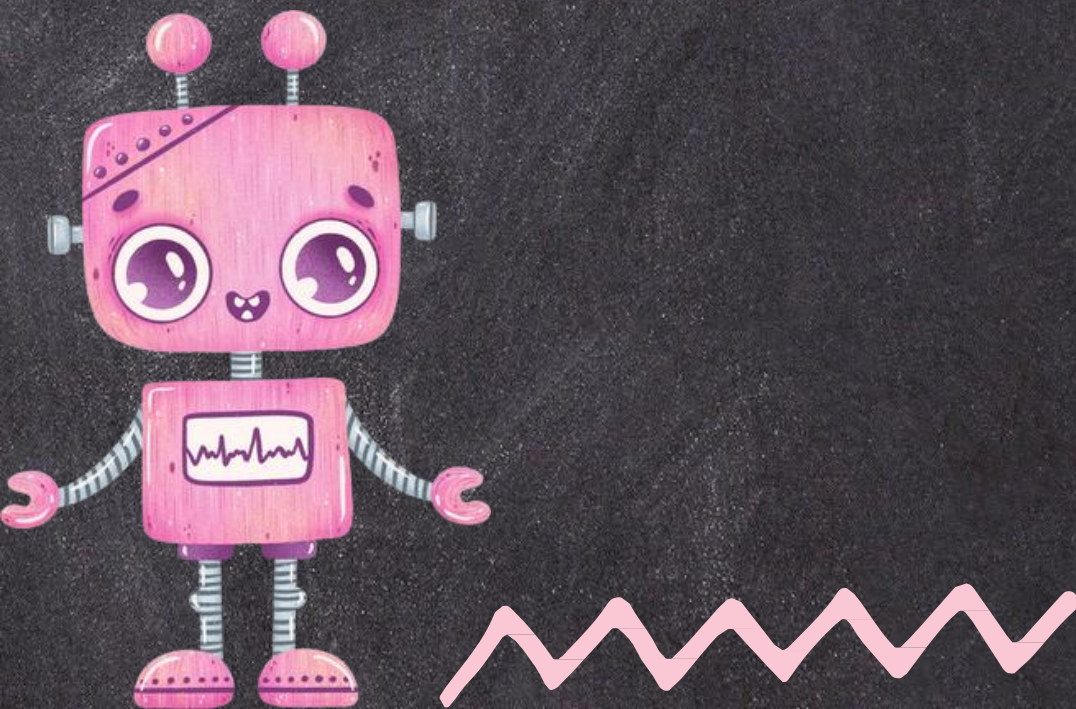


DESIGN SPECIFICATIONS:

- Bridge must span a gap of 40 cm (400 mm)
- Overall bridge length: 45–50 cm • Width: Min 7 cm, Max 12 cm
- Max height: 20 cm
- Bridge must allow a test block of 5 cm height × 5 cm width to pass underneath.
- All joints must be made with glue only — no carving, cutting, or melting sticks.
- Stick overlapping is allowed but not stacking more than 3 layers.

TESTING PROCEDURE:

- The bridge is placed on two flat supports spaced 40 cm apart.
- A loading pan or hook will be attached at the center.
- Weights will be added incrementally until bridge failure or maximum load is reached
- The maximum load held before failure is recorded.



SCORING CRITERIA:

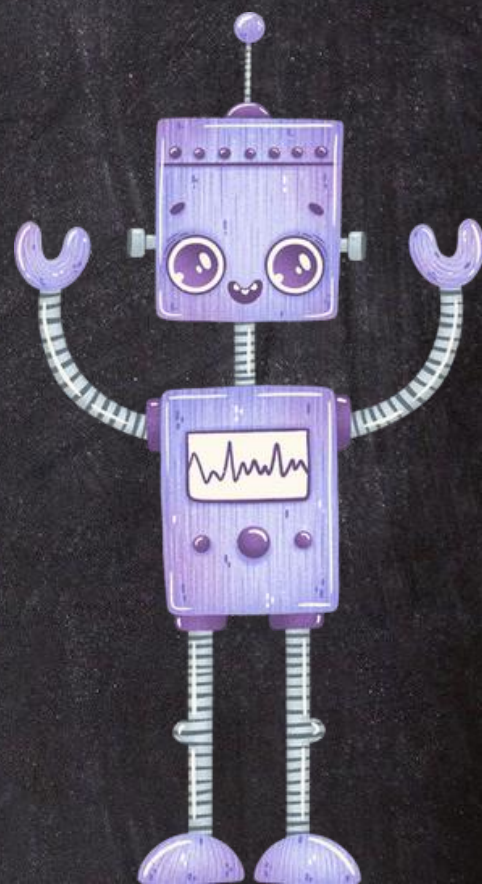
Criteria	Points
Maximum Load Held	40
Strength-to-Weight Ratio	20
Structural Design (Truss efficiency)	15
Aesthetics and Neatness	10
Oral Presentation & Explanation	15

PENALTIES:

Violation	Penalty
Exceeds stick count	-10 points
Use of disallowed materials	Disqualification
Incorrect span or dimensions	-5 to -15 points
Excess glue/clumped structure	-5 points
Missed inspection	Not eligible for testing

DISQUALIFICATION:

- Use of non-permitted materials or adhesives.
- Bridge not within basic dimensional limits.
- Unsafe or hazardous construction.
- Team fails to report on time.
- Misconduct or unsportsmanlike behavior.



WINNING CRITERIA:

- Winner determined by highest score
- In case of a tie, higher load capacity wins

VENUE: TBA

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