



## PROBLEM STATEMENT

Design a truss bridge using Popsicle sticks (ice cream sticks) satisfying the stated Constraints.

### Event Structure

- Round 1: Teams should construct the model during the event in the stated period.
- Round 2: The participants can test their structure to check for the model's strength.
- Round 3: The last chance to modify the model and finalise the structure.

### Materials:

- Use only the popsicle sticks provided by the club.
- Sticks can be altered physically by cutting or notching at any angle.
- Only Fevicol can be used as the adhesive, use of other adhesives may lead to disqualifications.
- Use of threads is not allowed.
- Pre-design layout of the bridge can be brought.

### Bridge Dimensions

- Length = 50-60 cm
- Minimum length of loading platform = 30cm
- Width = As per the design of the team
- Height = As per the design of the team





### Testing the bridge

- The load will be applied through a platform at the top of the bridge.
- The bridge model will be loaded till failure.

### Team Size:

- 3 – 5 students per team.
- Any number of teams can participate in the event from different Pools.

### Construction

- Sticks can be stacked together lengthwise to form stronger structural elements or to make long-span elements.

### Judging and Scoring

- First the structure will be reviewed to check if it violates any rules mentioned above.
- The bridge will be scored on how well the material has been used to support the load.
- The efficiency will be calculated as the ratio of ultimate load capacity and the bridge weight.

$$\text{Efficiency} = \frac{\text{Applied load} * \text{Height of platform from the base of the bridge}}{\text{Weight of Bridge}}$$

- The deflection of the bridge at yielding will be noted. If the deflection increases more than 10 mm, then the load at that deflection will be taken as the ultimate load.





## Penalties

- Violating any of the conditions mentioned below, penalty will be imposed according to the judges and may lead to disqualification:
- Dimensional specifications are not met (Penalty of 10% of the total score)
- Use of material, except the ones stated in the rules● In case of any discrepancies, the decision taken by the judges and the council will be the final verdict.

## PRIZES

- The prize money will be awarded to winners via NEFT and will be processed within 25 working days after receiving the prize money from our sponsors.
- The winners will have to mail the following information (immediately after the announcement of results) to [techclub@nituk.ac.in](mailto:techclub@nituk.ac.in) strictly in the following format:

- Subject

- Competition Name, Team ID - your position (example- Robowars, PG1003- 3rd Position)

- Body of mail:

- Captain Account Holder's Name
- Account Number
- Bank name and Branch name.
- IFSC Code





**AN IMPORTANT NOTE:**

- Judges can disqualify a team if any of the above criteria is not fulfilled.
- These rules may change at any time, even without explicit notification to teams.
- However, the document uploaded here is to be followed as the latest problem statement for all the rules and design specifications. The teams acknowledge that they have a responsibility to read, understand and abide by the rules and
- Prodyogeeky reserves the right to prevent any team from competing at any time for any reason.
- In case of any queries, participants are encouraged to contact the Prodyogeeky'24 Team.
- Prodyogeeky'24 has the rights over the guidelines and can alter them as per the requirements.

