

## GTU TECHFEST2019

---

<b>Department</b>	<b>: Civil</b>
<b>Name of Event</b>	<b>: Breakup Bridge</b>
<b>No of Participants</b>	<b>: Maximum 3 and minimum 2 participants per team</b>
<b>No of Winners</b>	<b>: 3 teams</b>

### Event Description

---

- In this event, **through (upper) truss bridge** is to be constructed using Pop sticks (ice cream sticks) satisfying the stated constraints. The event consists of three rounds.
- First round would be based on the computer game. Round 2 being the elimination round (if your structure collapse in round 2 then it will not be eligible for next round). Best model with load carrying capacity will enter round 3 in which seismic capacity will be checked.

**Arena** -Brick base (8\*4 m).

### General Rules

---

- In the first round any one member of team would be allowed to play a game on PC and at that time remaining members will not be allowed in the room.
- Shape-Structure would satisfy all the constraints and the length of the bridge should be 90 cm.(+ OR – (1cm)),the width of the bridge must be 20 cm and height must be 18 cm, and also weight will be consider according to the judging criteria.
- The layer of the sticks for deck will be 2 and for the truss it is 2.
- Once the structure is approved by authorized coordinators you are not allowed to modify the structure in any way.
- Any team that is not ready at the time specified, they will be disqualified immediately.
- Judges decision shall be final and binding above all.

### Requirements

---

- Robot train which can carry load upto 10kg and move freely
- Deflection checking unit
- Dial Gauge
- Dial Gauge Stand
- Double sided Tape
- Cello tape
- Weighing Machine
- Shake table
- Ply wood sheet

- Pc with installed game
- Weights

## **Specification – Bridge Specification**

---

For Pop Stick:

- Max. length = 120mm
- Width = 12mm
- Thickness = 2mm
- Fevicol MR or SH white adhesive should only be used to build a structure.

For Bridge:

- Length of the bridge should be 90 cm.
- The width of the bridge must be 20 cm
- Height should be 18 cm (from deck to truss).
- Also weight will be consider according to the judging criteria.
- Clearance width of the bridge must be 18 cm for moving load.

## **Team Specification**

---

- Team should be consisting of maximum 3 players and minimum 2 players.
- Students from different institutes can form a team for the event.
- Student should carry the valid college identity cards of their respective institute at the time of reporting.
- Switching of team members during the on-going event will not be allowed.
- Use of any kind of help from Google is strictly prohibited.
- Once coordinator verify the model teams are not allowed to do any change in model.

## **Level Description**

---

### **ROUND 1 (Gaming):**

In this, The Participants will have to play game of bridge construction, all the participants will be allowed in the next round, but the points count in this round will be considered in final score.

### **ROUND 2 (Deflection check):**

In This moving vehicle with weight will travel from bridge and thus the deflection will be checked.

### **ROUND 3 (Seismic Check):**

In this round the bridge will be placed on a seismic machine and the strength of the bridge will be checked in different seismic frequency and load.

### **Evaluation Criteria**

---

- Deflection will be checked by applying moving load.
- Moving load will be applied on the entire span of the bridge.
- The seismic strength of bridge will be measured by considering the load and the frequency of vibration.
- Result will be declared on the basis of Efficiency.

### **Judges:**

---

- Any one Industry Expert with minimum 10 years of experience in the relevant discipline  
OR  
Any one Academic Expert with minimum 10 years of experience in relevant discipline
- Any one faculty from any other GTU affiliated college in the same zone  
OR  
Any one faculty from the Host Institute.