

Department Level IPL Presentation

Project Based Learning

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Purpose/Motivation of Technique

- Today's 21st century learner has various styles of learnings.
- Blend of active learning tools to address needs of various learners
 - Case Study Based Learning.
 - Activity based learning through Micro and Macro activities.
 - Project Based Learning.

Suitability of Technique to Course

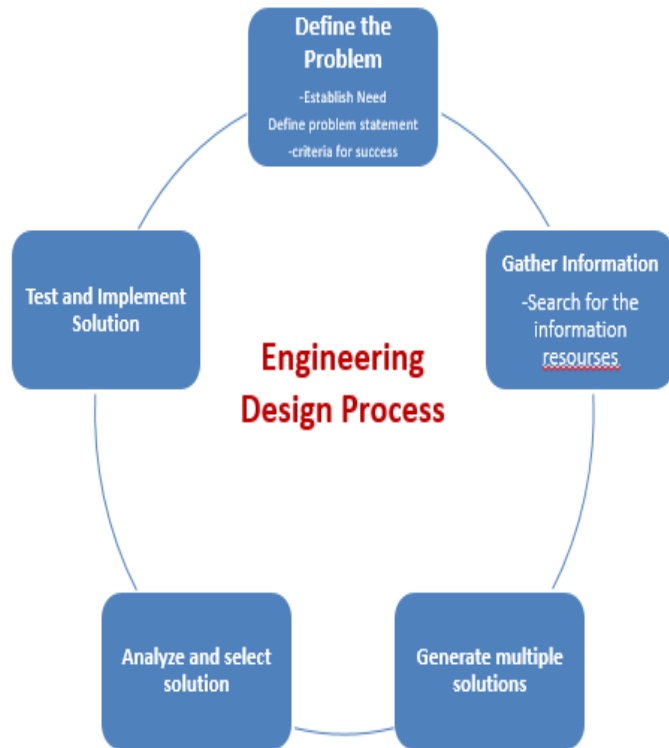
- Course is designed based on the philosophy of Using active learning tools itself.
- This course cannot be taught using traditional teaching techniques like chalk and board.
- All techniques used can address needs of various learning styles of 21st century learner.

Activities Conducted for Teaching Engineering Design Module

1. Micro Activity for preparing problem statement for design of a mousetrap.
2. Macro Activity for Preparing Problem Statement from Need Statement.
3. Macro Activity of Decision Matrix preparation for Bike selection.
4. Mega activity of Bridge construction with given constraints (Project based learning).

Mega activity of Bridge construction with given constraints (Project based learning)

Engineering Design Process



Activity

Group Size: 4

Time: #60+30* mins

Bridge building with popsicle sticks

Objective: Build a bridge made solely from popsicle stick and glue which can hold 5Kgs of weight for 5 minutes.

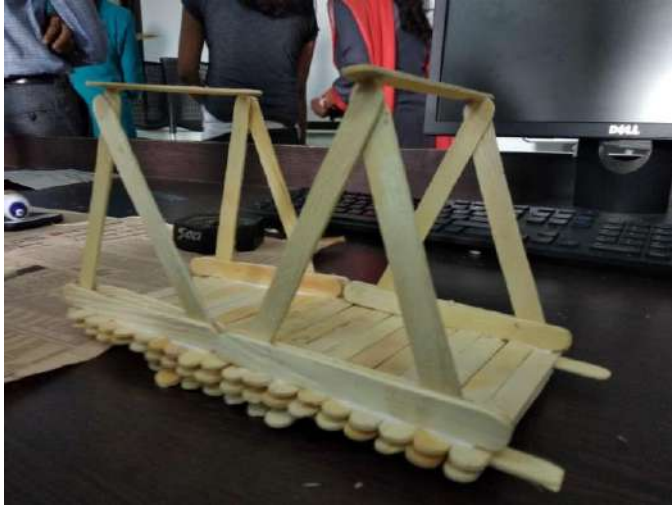
- Prepare alternative designs and select the best design.
- Use popsicle sticks to construct the bridge
- Test the design for the given constraints.

Constraints :

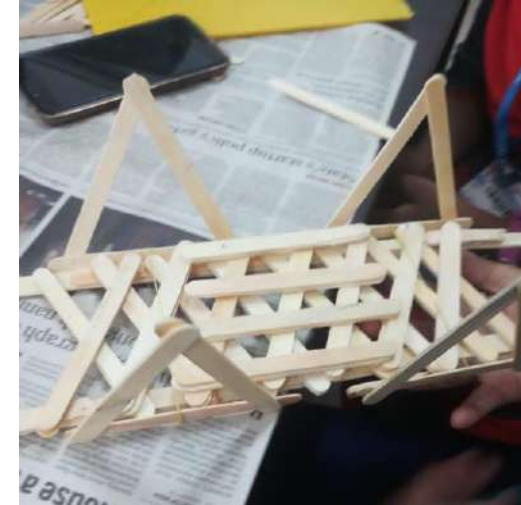
- Not more than 100 sticks
- Expecting to hold up to 5 Kg of weight for 5 minutes



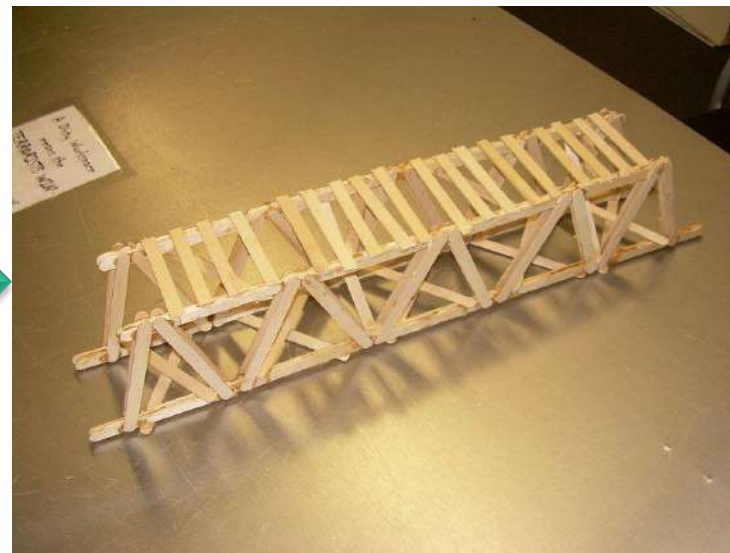
Outcome of the activity



Bridge construction by
Student groups



Student groups
Prepared Prototype



Photographs and Student Response



Test

- Score = $[(\text{Weight} \times \text{time}) / \text{no. of sticks}] \times 100$
- Score = $[(5 \times 5) / 100] \times 100 = 25$ (Max. score)

Group	wt	time min	stick	Marks
J1	2	3	100	8
J2	4	4	100	15
J3	2.5	2	100	5
J4	2.1	2	100	4.2
J5	1.2	4	100	15.8
J6	3.2	3	100	9.5
J7	4.2	3	100	12.6
J8	4	4.3	100	12.2
J9	-	-	-	-

Thank You!!!