



Department of Civil Engineering
Eastern Mediterranean University
Spring 2021-2022

STRONGEST MACARONI TRUSS COMPETITION

Design and build your own truss using macaroni

Learning Objectives

- To create design sense
- Group work and discussion.
- Construction of design and discussion of possible problems

Materials List (Provided by the department)

- 1 bucket full of sand and 2 empty buckets.
- Steel weights ranges from (0.5 kg – 5 kg).
- 2 tables (placed 45 cm apart).
- Double headed hook.
- 10 cm long wooden piece with a hole in the middle.
- Screw that has hook to be fixed with the wooden piece.
- One electronical balance.

THE RULES

Teams can have up to 5 persons. The top three teams will be receiving an award certificate for the stongest built truss.

- 1- The bridge should has a minimum length of 45 cm.
- 2- And minimum base width of 15cm (the roof width is not restricted).
- 3- There is no limitation for the height of the bridge.
- 4- The net weight of the bridge (after assembling, including the glue) should be maximum 800 gr.
- 5- Only joints that connect different members can be glued.
- 6- Only silicone glue gun is allowed.
- 7- The glue width at the joint shouldn't exceed 2.5 cm.
- 8- The bridge should be able to carry at least 6 kg.
- 9- As shown below two elements should be provided at the mid span of the bridge. (These elements will form the base of loading plate).



In the day of the competition if any of the rules aren't fit to a structure, the structure's team will be disqualified.

Winning bridges are the ones which got the highest load to mass ratio.

Those who are interested in taking part, are invited to register their names with the construction club.