CONTEST REGULATIONS
C A D R E (F R A M E S)
BRIDGES AND FRAMES WOODEN MODELS
-2019-

I. PERIOD. PARTICIPANTS

I.1. Period of the competition: 21st- 23rd of November 2019.

I.2. The students who may participate must be at least in their IVth year or above at any civil engineering profile university. Teams of maximum 2 persons may register.

I.3. Registration of the participants can be done online using the link: https://forms.gle/Q4CYLVksTFW8L8Fy5 or directly with the competition's coordinator, Lecturer Dr. Eng. Corina Chiotan - chiotanc@yahoo.com, until the 19th of September 2019.

I.4. The competition is structured in two sections:

I.4.a. Bridge models section

I.4.b. Spatial frames models section

I.5. Each participating team will have to send will have to send a short article of maximum 5 pages containing the description of the team and a presentation of the structure to be shown in the competition containing the design principle and the fabrication process to the competition coordinator at: chiotanc@yahoo.com

II. MATERIALS

II.1. Each model must only be made using balsa wood.

II.2. Each team entered in the contest will be able to use a maximum of 10 wands of balsa wood with dimensions of 8x8 - 1 000 mm and a wooden deck of the same wood, with dimensions of 4x100 -1000mm.

II.3. The bridge or frame model must not be covered, painted or colored with any other substance then glue

III. CONSTRUCTION REGULATIONS

III.1. The bridge models must have upper carriageways.

III.2. The span of the bridge model (measured between the bearing axes) must be of 50cm, and the total length must not exceed 60cm.

III.3. The construction height must be no more than 15cm, and the width of the model must be 12cm maximum.

III.4. The frame model must be made according with a special truss.

III.5. The frame must have exactly two resting positions with a distance between them of 50cm. The outer dimensions of the frame must be no more than 60cm long, 10cm wide and 15cm high.

III.6. Wood adhesive will be used for joining the elements.

IV. TESTING THE MODELS

IV.1. The static layout of both bridges and frames models will be of a simply supported beam

IV.2. The models will be tested using a universal press, with either hydraulic or mechanical

IV.3. The models will be placed on steel horizontal bearing surfaces.

IV.4. The models will be loaded in the central section of the span between the two bearing sections using a device similar to a hemicylindrical mandrel. The linear load of mandrel will be transmitted to the structure as a uniform area load, by means of a metallic 12 by 12cm steel plate.

IV.5. The models will be loaded in the central section of the span between the two bearing sections using a device similar to a hemicylindrical mandrel. The linear load of mandrel will be transmitted to the structure as a uniform line load, by a direction perpendicular to the longitudinal axis of the frame.

IV.6. The test will be done up to the collapse of the structure. The collapse is defined by the inability of the structure to take on additional loads.

V. ESTABLISHING THE WINNERS

V.1. Each section will award the first 3 teams, established descendent by the ratios between the force of collapse and the structures own weight.

V.2. Each section will award a prize for the most aesthetic model, established by the vote of a jury.