IASS MEXICO CITY 2025 · THE LIVING PAST AS A SOURCE OF INNOVATION

WS04

Membrane Tensegrity Shell Structures

This workshop will show participants how to design Membrane Tensegrity Shell (MTS) Structures. MTS structures consist of a network of discrete struts within a continuous tensile membrane. Unlike typical tensegrity structures MTS structures are relatively easily drawn and modeled since they have only a 2D pattern of struts and a single membrane. Validated MTS design workflows developed by the team will be shown from first principles. Participants will be able to tailor their own MTS's using both physical and digital modes. The attendees will be provided with a kit of parts including fabric for the membrane, and laser cut plastic/plywood for the struts, to create a physical model of their MTS structures. Data from these physical models will be used to determine specific input parameters to the simulation to create a digital twin. Through this digital twin, iterations of designs can then be made that reflect the physical output. Outputs will include 1-3 physical tensegrity models about 30cm square in size and a series of digital designs in Rhino 3d.

Tutors · Kenneth Tracy, Christine Yogiaman, Ying Yi Tan + Prerita Jinachandran. |
College of Architecture, Art, and Design American University of Sharjah, UAE | Canadian University of Dubai | Singapore University of Technology and Design

Requirements · **Personal laptop (windows is preferred) previous knowledge in Rhino/Grasshopper/Karamba3D/Speckle/PowerBI would be greatly beneficial**

Capacity · **25 Participants**

October 26 | 9 - 18h
Centro de Ingeniería Avanzada
CU UNAM