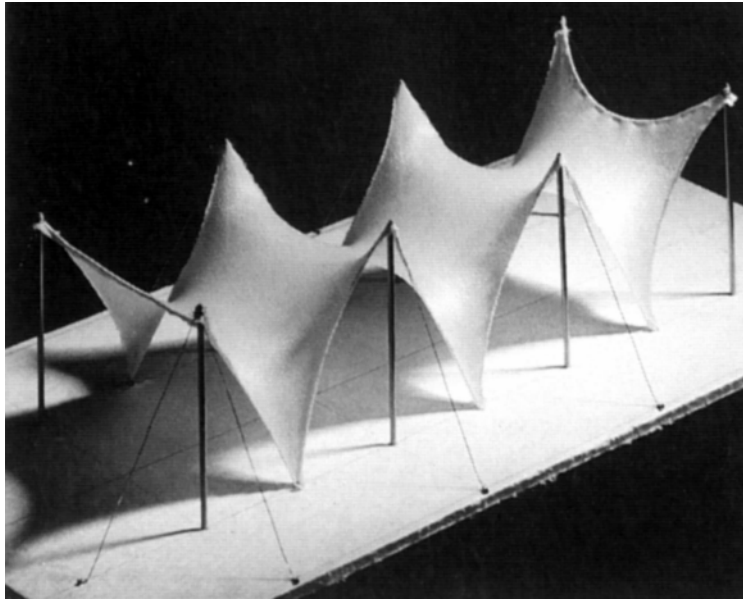


### Membrane Structure Models



As we have discussed in class, membrane structures are constructed of minimal surface elements of double curvature — a shape which provides for load carrying capacity in both downward as well as upward loads. To develop a better conceptual understanding for the behavior of fabric structures small-scale models are an important design tool. In addition, prior to the advent of computer analysis, scale models were (and often still are) the primary means by which the patterning of the fabric is derived for the full scale structure.

For this assignment, using lightweight high-stretch fabric such as Lycra or nylon hosiery, you are to develop a study model of a double-curvature fabric membrane structure. The model should represent a roof for a building such as a pavilion, arena, or other facility where the benefits of fabric translucence, light weight and long spanning capability are required. The number of surfaces is up to you, and the membrane may be one contiguous piece or multiple seamed pieces. The size of the models should be approximately 12"-18" on a side.

