Free Form Surfaces

Project (4) Laminated Object Manufacturing (LOM):

In this project we are going to discuss the possible ways of making a 3D shape with coordinates (x, y, z) using a laser box cutting device. This laser will cut in order a certain number of laminated sheets, which have certain dimensions and thickness. Moreover, we are going to illustrate the steps and trials for making this 3D shape in the lab. On the other hand, we are going to make a program with a code that would be able to run this operation. There are also some characteristics that we are going to take into consideration, like the material that will be used in the laminated sheets and the 3D shape that could be possibly made.

We want to add that we would probably face some troubles during coding as well as in the practical part. As an example, we could repeat the laser cutting part with different materials until we choose the best material that we could manage to reach our desired 3D shape while using it. Also, we should figure out the best way for the fixation of our laminated sheets to be fixed and ready to be cut with the laser, by considering that the process of laser cutting will be repeated on every laminated sheet. During the cutting process, it's required to release every sheet instantaneously after being cut by the laser. At the end of the laser cutting operation, we must find the right material which could be used to attach the batch of the laminated sheets together, to make our desired 3D shape.