

**Assignment 05 \_ 3D Printed Mesh Box Relaxed Tessellated Structures**



**Project:**

Please note that this is a new assignment, it hasn't been assigned before. The images above do not fully represent the final outcome of this assignment. The outcome of the assignment is that each student will produce (3) 200 mm x 50 mm x 50 mm minimum print size 3D prints. Next week we will meet in Crown hall to display the 3D Prints. Use Grasshopper and Kangaroo 2 to create a relaxed mesh using the Rhino mesh box technique. Then use Weaverbird to generate a **Pattern** on the relaxed mesh. Your relaxed mesh with pattern must be 3D Printable. From your Grasshopper script, produce (3) 200 mm x 50 mm x 50 mm minimum print size 3D Prints.

**Objective:**

Learn about Mesh Modeling. Explore the relationship between digital and physical output through 3D printing. Learn to use the CoA Shop 3D Printers to prepare for the Midterm and Final assignments.

**Process:**

Use Rhino to make an Architectural form using the mesh box technique. Use Kangaroo 2 to relax the mesh. Use Weaverbird to add a pattern and smooth the mesh.

**Schedule:**

Class-06 - Submit the deliverables listed below before the start of class-06:  
We will meet in Crown hall to display the 3D Prints and take photos.

**Deliverables**

Produce (1) 11x17 sheet at 200 ppi with the following drawings  
(3) 3D Views of the 3D Model showing (3) different parametric conditions (iterations)  
(1) Grasshopper Definition  
(3) 200 mm x 50 mm x 50 mm minimum print size 3D Prints  
Create a Separate PDF with (3) photos of your 3D Prints. Take professional photos of your 3D Prints using a plain white background with good lighting for shadows. Then use Photoshop, or other, to edit the photos as necessary. See the header image for reference.  
Create (1) 11x17 PDF with (3) pages, (1) for each Photo. Each photo should be of the (3) prints together from different angles.

**Submit:**

Submit all deliverables to the shared drive  
Please save your files in a folder Firstname\_Lastname in a sub folder A#  
Please save your work as a PDF Firstname\_Lastname\_Assignment#

**HOMEWORK ASSIGNMENTS MUST INCLUDE THE FOLLOWING:**

- YOUR NAME
- ARCH 436 - Advanced Modeling
- SEMESTER / YEAR
- HOMEWORK ASSIGNMENT #