Week 10: Tool Creation.

**Motivation:**  
Take everything we have learned and make it available to artists.

**Learning Objective:**  
Methodology of: working with users, artists needs, ui/ux  
Concepts of: using existing tools, parts of tools, imported tools

**Schedule:**

Part 1:

* Building a production ready tool in Bifrost
  + The students are provided with a graph to turn into a tool in Maya
    - Input curves, utilising fan-ins rather than building arrays
    - Maya Node Editor and connections, how to leave an aaray open to new connections
    - Connecting in the node editor and the attribute editor
    - Limiting inputs and data – clamping and resizing
    - Avoiding the “too few instances” problems
    - Rotations for users, why we use degrees in the interface and radians in the tool
    - Matrix array inputs in the node editor, slicing arrays
    - Building random inputs with min/max settings
    - Building random inputs as a percentage
    - Building a Level of Detail control

**Break: 10m**

Part 2:

* How this tool actually works, check our work so far
* Continue building
  + Multi-dimensional array, why we use them
  + Why are we constructing strands multiple times?
  + Flattening arrays
* Controlling wire sag
  + Per wire
  + Per pole
  + Overall
* Bifrost Interface
* Maya interface
* Culling from output to achieve random
* Output to Maya Mesh
  + Baking instances
  + Strand extrusion
* Output to USD
  + USD pointinstancer output
  + Strand extrusion
  + Strand to mesh

**Break: 10m**

Part 3:

Free time to finish up! Time to talk, review, chat, soft skills, advice etc