Foldable Robotics

Manufacturing III: Scripted Mechanisms with the foldable_robotics python package

Foldable Robotics

- Please Install / Update foldable robotics package

```
pip uninstall foldable_robotics
pip install foldable_robotics
```

- Documentation:
  - http://idealab.asu.edu/code_foldable_robotics/

Layer Class

- Permits many shapely entities to be grouped together
- CSG operations
- Transformations

Laminate Class

- Permits layers to be operated upon at once
- Access layers like you would access elements of a list, with slicing
  - The result of a single index slice is a layer.
  - The result of a multi-index slice is a laminate

Define a Hinge

- Geometric problems associated with contacting geometries
- Associated with laser cutting constraints.
- Many potential solutions. One is the “castellated” hinge design
- How do you insert a hinge?
  - Remove a square, insert the intended hinge geometry

    or
  - Remove the negative of the intended geometry
- What goes in a hinge
  - Lots of boxes, stretched, scaled, translated on one layer
  - Many layers, some the same, others flipped in y(using scale)
- map_line_stretch function makes it easy to relocate a laminate or layer by stretching and scaling based on two points.

Dxf-based(next time)

- Draftsight
- Use ascii, most recent version available.