Tool Proficiency Project: *Dimension and Fortus 3D Printers*

Instructions for Lab Assistant:

**Before You Begin This Proficiency Assessment:**
- Watch the training videos for the equipment upon which you will be demonstrating your proficiency.
  - Loading/Unloading Material - https://www.youtube.com/watch?v=NWnW-toumUE
  - Catalyst Software - https://www.youtube.com/watch?v=UeC9_qc54o
  - Insight Software - https://www.youtube.com/watch?v=jisB9HigxOc
  - Insight Time Saving Techniques - https://www.youtube.com/watch?v=0F212ihtaHl
  - Repairing bad STL’s with Netfabb - https://www.youtube.com/watch?v=cqrpGn87sxw
- Read and understand instructions associated with the equipment.
- Understand the 3D printer Job Log

**Supplies Required:**

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Item Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1 messed up STL to fix (Porsche file, linked)</td>
</tr>
<tr>
<td>1</td>
<td>Your choice of STL to print</td>
</tr>
</tbody>
</table>

**YOUR TASKS**
- Prepare a CAD file to print, or use a supplied example
- Repair a bad STL
- Prepare a file to print on both the Fortus and Dimension printers
- Print an object of your choice on one of the two printers
  - Maximum model material volume of 1 in³
- Remove the support material from your part
- Explain how to replace the print and support material in the printer
- Explain part orientation and layers and what they have to do with finish and strength

**Proficiencies to Demonstrate:**
- Know the file type needed and how to get it
- How to repair bad STL files
- Load the model
- Orient model using a face
- Select infill, support options, and layer height
- Pack a build plate, including working around previous print jobs
- Log your print job
- Load a build platform in the printer
- Start the print job
- Explain how strength varies by direction
- Change/load material
- Dealing with support material: washing and other removal methods.
- Best practices: Reuse of build plates