**3D Printer: Articulated Model Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**NOTE:** Those of you have have 3D printers or significant previous experience please watch and listen and allow those who are new to this the opportunity to learn and experience. I would welcome any comments that you might have to improve this lab experience.

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|  | **TASK** | **Notes** | **Check** |
| 1 | **Choose Articulated Model**  Choose the .stl file for an articulated object you will be working with today. The file is available on the github for the course in the 3DPrinters/stlFiles/articulated folder. Github will render the file so you can see it. The download button is in the small menu at the top right of the rendered page. Save it someplace on your computer. Open in Slicer and prepare the gcode. Be sure your object will print in 60 min or less. NO BRIM for the flat objects |  | ❏ |
| 2 | **Reverse Engineering**  While your object is printing return to slicer. Look down through the layers to understand how the print interlocks the parts so they move but stay together. You can make some reasonable estimates of the width of any gaps from the extruder paths as well as the shape of the interlocking parts. Sketch the shape of those interlocking parts so you COULD implement it in Fusion. Your sketch should provide all the detail you need to create your own test version of the object.  This sketch will be scanned and turned into Canvas directly. |  | ❏ |
| 3 | **Print Success**  When your group completes it's print **be sure to clean up** all the plastic bits at the printer before moving on to explore how the articulated object moves. Does it bind in certain places? Does it loosen up with wear? What is the range of motion for a given trapped object? |  | ❏ |
| 4 | **Reflection**  Reverse engineering is a real job but more importantly it's a way of learning from what others have done. What did you learn about your skills in reverse engineering as you tried to figure out how someone else created an articulating joint? How might you improve your skills at reverse engineering?  Your reflection is turned in directly to Canvas. |  | ❏ |
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