SOLID RINGS V1

MOTIVATION:
You're launching your jewelry design business and need more pieces to add to your collection. You want to have a ring to add to your collection that is a relatively simple design and will appeal to large audiences.

SUBMISSION:
Submit the link to your google drive folder with all the requested documents in it, properly labeled, on schoology to the proper assignment. If not submitted properly, you will not be graded. Save and name your file with the following file naming format:

YYYY.MM.DD_LAST,FIRST NAME_ASSIGNMENT NAME_XXX

EXAMPLE: 2020.11.16_CRUZ,JOSHUA_01.01.01.A_001

GRADING:
You will be graded using the rubric below. **You will be graded on your virtual submission and physical submissions, please make sure to submit your documents with a checklist.**

Ring Design (20 possible points):
- Please refer to checklist

Layout (14 possible points):
- Please refer to checklist

3D Print (17.5 possible points):
- Please refer to checklist

Post Processing (6 possible points):
- Please refer to checklist

Documentation (18 possible points):
- Please refer to checklist

TOTAL POSSIBLE POINTS: 75.5 points

PROMPT:
3D model a solid ring to 3D print

DIRECTIONS:

Read all of the directions carefully, gather your material, clean/organize your workstation/area and assign an amount of time for each step before starting your project.

PART 01: MODELING

1. Open Rhino, the training manual, and the Help file
2. Watch the following Video

3D MODELING:

1. Create a new rhino file using the small objects - millimeters template
2. Using the ring gauge in the classroom, identify your ring size for your finger of choice.
3. Start with a circle which has the diameter of your ring size. When modeling your ring, make sure none of the solid portions are on the inside of this circle, all elements of the ring must be on the outside of this circle, otherwise your ring will not fit.
4. Design a ring using the strategies covered in the video, your ring should not be the same design as seen in the video, it should be a design unique to you.
    a. The top of your ring should be a shape with an opening bent to the shape of your ring (see video for example, in the example they form a cross over the top and bend it to be the space of the ring)
    b. Your ring should have a band that smoothly transitions from your design/shape on the top of the ring.
    c. Your ring should be completely solid and have no openings

RENDER:

1. Apply an appropriate material to your ring.
2. View your model in Raytraced.
3. _VIEWCAPTURETOFILE (make sure there is an underscore) and save your file in your Google Drive folder on your computer.
4. Save high quality photos of the following angles Top (x1), Right (x1), Front (x1) and perspectives of your choice (x3).

PART 02: LAYOUT

1. Download the following files and ADD them to a resources folder in your Drive
    a. Use this layout if your document unit are in INCHES
    b. Use this layout if your document unit are in MILLIMETERS
2. Create a new layout by importing the respective layout based on your document units
3. Create a new detail on your layout for your TOP, FRONT, RIGHT and PERSPECTIVE views
4. Adjust the scale and position of your details to one of the below standards, center it and lock it so it is as large and visible on the page as possible without exceeding the title block/page limits..

1:1 Scale 1:2 Scale 1:3 Scale 1:4 Scale 1:5 Scale etc.	a. 1:1 Scale b. 2:1 Scale c. 3:1 Scale d. 4:1 Scale e. 5:1 Scale f. etc.

5. Ensure all of your details are the same scale and aligned with one another, just like a multi-view orthographic drawing
6. Lock your detail so the scale is not accidentally adjusted
7. Create a 10mm or 1" line, respective to your document units, in **the bottom right hand corner** of your page to serve as a scale. This will be measured to make sure your scale is actually what you say it is.
8. Adjust the position of your detail title so it is nearby, but not too close to the drawing or too far so it's visually associated with your drawing, scale it up or down if necessary
9. Adjust the information of your detail title so all of the information is accurate relative to its respective drawing
10. Align all of your detail title so they are lined up with one another across the page
11. Adjust the information of your title block so ALL of the information is accurate relative to its respective company/business, drawing, draftsperson, client and revision cycles
12. Fully dimension the drawing in the correct units minimally including all of the dimensions from the reference drawing and indicating the size of the handle/neck/shaft/tip, diameters of all relevant parts, radii of filets and overall dimensions.
13. Save your work

14. Print the file as an Adobe PDF.
15. Print your PDF at 100% scale on an 11X17” page
16. Document and submit your work.

PART 03: EXPORTING

EXPORTING:

1. Change your units to `mm, click yes when it prompts you to scale your models
2. Select your handle, which is a single solid object
3. Export your handle as an .STL with a .01mm tolerance and a Binary file type
4. Place your file in your shared drive!
5. Save your file as a new version which has “MM” in the file name. DO NOT SAVE OVER YOUR ORIGINAL FILE

PART 04: SLICING

PRE-FORM:

1. Find a team of 3-4 people to work with
2. Open the .STL files for all of your team members on a single computer in PRE-FORM
3. Set-up one click print
4. Connect to the proper printer
5. Send your files to the printer once you have received approval from your instructor!
6. Save your pre-form file

PART 05: DOCUMENTATION / SUBMISSION

1. Take a **high quality** Screenshot of the contents from your file **(Pre-form & Rhino files)**
    a. Add your images to the appropriate Class projects sub-folder in your Google Drive with the files named correctly :
        i. EXAMPLE: 2020.11.16_CRUZ,JOSHUA_01.01.01_001

2. Take a minimum of 6 **high quality** photos of your ring from multiple perspectives, 3 not being worn, 3 being worn
    a. Add your images to the appropriate Class projects sub-folder in your Google Drive with the files named correctly :
        i. EXAMPLE: 2020.11.16_CRUZ,JOSHUA_01.01.01_001

3. Save your **.STL** to your google drive via the google drive app on your computer. Make sure to name your file in our file naming convention
    a. EXAMPLE: 2020.11.16_CRUZ,JOSHUA_01.01.01_001

4. Save your **.3MF (pre-form file)** to your google drive via the google drive app on your computer. Make sure to name your file in our file naming convention
    a. EXAMPLE: 2020.11.16_CRUZ,JOSHUA_01.01.01_001

5. Save your **.3DM (Rhino file)** to your google drive via the google drive app on your computer. Make sure to name your file in our file naming convention
    a. EXAMPLE: 2020.11.16_CRUZ,JOSHUA_01.01.01_001

6. Submit the link to your Google Drive folder containing the following files, to this schoology assignment:
    a. Your screenshots
    b. Your renders
    c. Your final photos
    d. Your STL
    e. Your Pre-form file
    f. Your Rhino file
    g. Your PDF of your drawings

7. Submit the following physical documents with your checklist:
    a. Your printed PDF at 100% scale on an 11X17” page
    b. Your 3D printed ring

RESOURCES:

EXAMPLE:

Your project should look *something* like this when you're done: