Purpose

This assignment provides an opportunity to continue developing part creation skills in SolidWorks using newly introduced advanced sketching and feature tools.

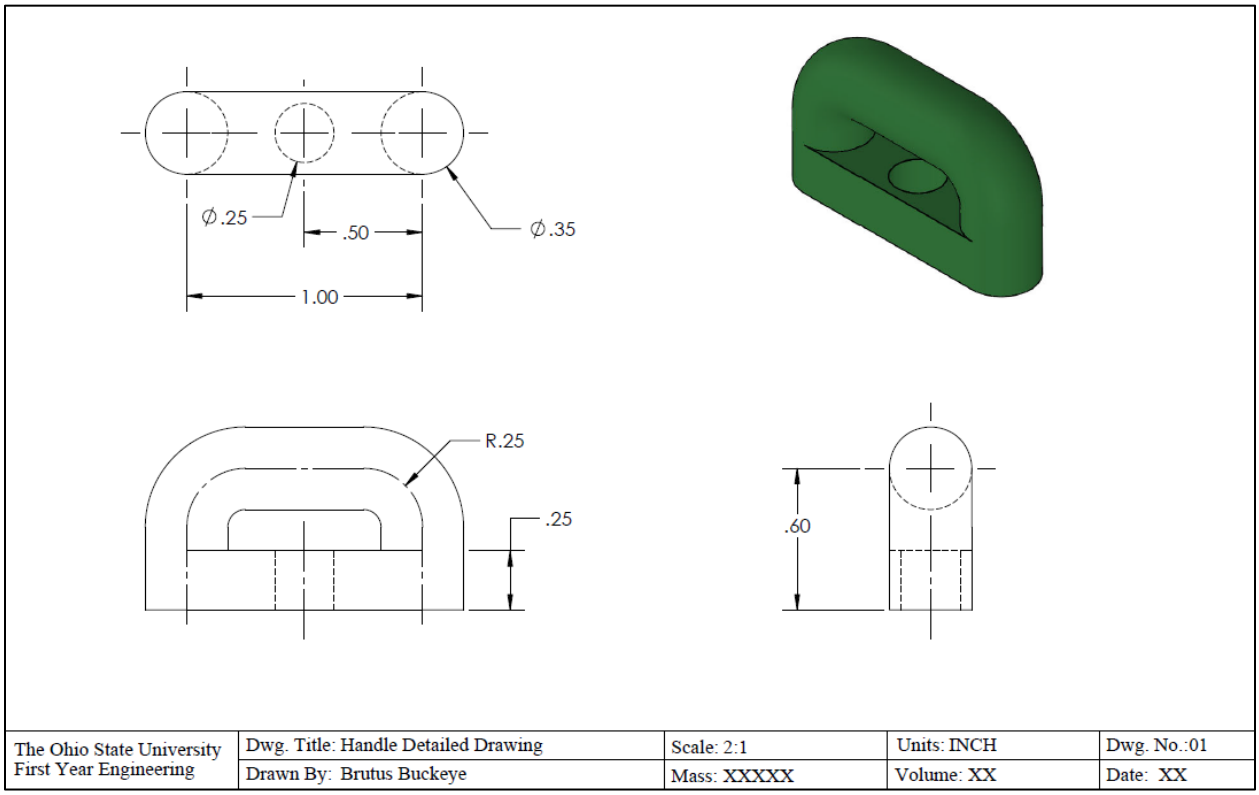
By completing this assignment, you will be able to:

- Use basic (line, rectangle, circle, etc.) and advanced (trim/convert/offset entities, mirror, etc.) sketch tools to create a 2D sketch (SLO 2a)
- Apply constraints and dimensions to fully define a 2D sketch (SLO 2b)
- Use basic positive and negative extrusions and advanced 3D feature modeling (sweep and mirror) to create 3D models (SLO 2c)
- Create accurate 3D models from provided physical objects and/or dimensioned technical drawings (SLO 2d)
- Interpret and identify pertinent information from detailed working drawings such as dimensions of parts (SLO 4h)

Task

Using the physical components and dial calipers available at your table, create an accurate part file of the Left_Side_Panel using at least 1 **mirror sketch or feature**. Set the material for the Left_Side_Panel to Oak.

Then, using the provided dimensioned layout drawing below and the physical component at your table as a reference, create an accurate part file of the Handle using at least 1 **sweep feature**. Set the material for the Handle to ABS.



The Ohio State University First Year Engineering	Dwg. Title: Handle Detailed Drawing	Scale: 2:1	Units: INCH	Dwg. No.:01
	Drawn By: Brutus Buckeye	Mass: XXXXX	Volume: XX	Date: XX

Discuss the use of the mirror and sweep tools in creating these parts and future parts. At a minimum, your response should address the following questions:

- Are there other methods/tools that could have been used to make these parts?
- What are the pros and cons of using a mirror and/or sweep vs. the alternative methods/tools you described?
- What types of parts/geometries do you see each of these tools being useful?
- How do these tools impact your design for the missing connector?
    - Provide an updated concept sketch of your design.

Submit

For each part, submit a screenshot of the entire SolidWorks window following the guidelines in the *SolidWorks Submission Standards* document in Carmen. Your submission should include the part in isometric view, expanded model tree (features), and the mass properties window as shown below in the *Criteria for Success* section. Also submit a word document or pdf containing your answers to the questions posed above.

Criteria for Success:

Grading of this assignment will be based on:

1) Adhering to the submission standards.
2) Proper use of the mirror and sweep tools to create each component.
3) Correctly setting the appropriate material for each component.
4) Accuracy of dimensions of each component as determined by the mass and volume in the *Mass Properties* window.
5) Reasonable and well thought out responses to the questions posed.

For detailed descriptions of the grading criteria for this assignment, please see the rubric on Carmen.