HW9 Revolve and Pattern Features Assignment Checklist Insights

Pre-CAD Plan

\_\_\_ Identification of Origin/Axes   Show location and orientation (x-,y-,z-axes) of the origin in all relevant pre-CAD sketches

\_\_\_ Thoughtful choice of initial features (extrude, revolve, etc.)  Choose an initial feature that is appropriate for the geometry of the given part. For example, if most of the part is made of concentric circular features, a revolve is most likely your most efficient initial feature.

\_\_\_ Thoughtful selection of sketch planes  choose and identify appropriate planes for your sketches in order to achieve the appropriate desired features

\_\_\_ Identification of lines of symmetry, patterned features, and associated reference geometry  do you use any construction lines or reference planes in order to mirror entities/parts or add symmetric constraints? Do you use any linear or circular patterns? If so, show where.

\_\_\_ Listing of notes and assumptions (i.e., all fillets have same radius)—keep a running record as the project progresses

Process Documentation

\_\_\_ Illustration & Discussion of Sketches (including relations and reference geometry)  show each sketch used to create your part, showing also the sketch relations (green square icons) and reference geometry such as construction lines used to make or fully-define the sketch

\_\_\_ Illustration & Discussion of Pattern Features (including order of implementation)  show any patterns you used to create the part and discuss/explain how/why the pattern was used. If multiple patterns were used, explain the order in which they were created.

\_\_\_ Rationale for Drawing Organization (views to present and their order)  In your dimensioned drawing, explain why you chose to use the views you show, and explain the reason for their order of appearance (if appropriate)

\_\_\_ Annotated Design Tree (showing sketches underneath all features)  Expand and rename all features and sketches

\_\_\_ Lessons Learned (at least three along with substantive explanation)  Explain at least 3 aspects of solidworks and/or the solid modeling process that you have learned in the process of completing this assignment

Products

\_\_\_ Fully Defined Sketches  no under-defined sketch geometry in your part model, this is determined from your **expanded** design tree

\_\_\_ Accurate/Attractive Solid Model  does your part accurately represent the part shown in the assignment? Does it look complete and attractive?

\_\_\_ Use of ME Drawing Template  use the ME drawing template (with title block filled in completely **from the part file custom properties tab**) to create a dimensioned drawing of your part

\_\_\_ Thoughtful Selection of Views with the 3rd Angle System  select appropriate views for your Front, Top, Right views (if needed) and other views as needed to show part geometry (section views, detailed views, auxiliary views…)

\_\_\_ Clear/Complete Dimensioning  include a sufficient number and appropriate organization of dimensions in order for the drawing file to be useful for a machinist in making the part. Follow dimensioning guidelines. – if you are given a dimension, you should show that dimension.