Scrub School Grading

The Scrub School is a machining exercise to get student's ready to go for the semester when they will begin their design/build.

There are three drawings (available on calliope.ualr.edu): Bearing Holder, Bearing Adapter, and Bearing Dowel.

The student must turn in 1 Bearing Adapter and 1 Bearing Holder with 2 Bearing Dowels pressed into the .179" holes.

The student must turn in the drawing of the Bearing Holder, Bearing Adapter, and Bearing Dowel, with measured dimensions of the parts on the drawing, written next to the drawing dimension. Does not include reference dimensions.

Grading will be as follows:
Bearing Adapter Part: 25 points
Bearing Holder Part: 25 points
Bearing Dowel Part: 3 points each
Dimensions: (Bearing Adapter x4, Bearing Holder x14 , Bearing Dowel x2x2): 2 points each

Penalties:
1. Egregious mistakes in dimension measurement will result in no points being awarded for that measurement. Instructor will spot check by measuring the part and comparing against the drawing.

2. If all measurements for a part are inside the tolerance zone, 100% credit will be granted for that part. However, if the dimensions of the part are outside tolerances, a deduction of credit for that part will be applied. A dimension that is 10% outside the tolerance zone will receive half credit. Beyond that, no credit for that dimension. The part credit will be multiplied by the percentage (actual dimension credit)/(total dimension credit).

So, for Bearing Adapter, if all four dimensions are inside the tolerance zone, credit is assigned as 25 points * (4 dimensions in the tolerance zone)/(4 dimensions).

If one dimension is 10% outside the tolerance zone, credit would be 25 points * (3.5 dimensions in the tolerance zone)/(4 dimensions).

If two dimensions were more than 10% outside the tolerance zone, credit would be 25 points * (3 dimensions in the tolerance zone)/(4 dimensions).

3. Functional Test: Parts which meet all the tolerances will be assembled into a functioning wheel module. The instructor will make a judgment call on how well overall the assembly performs. The entire grade will be scaled by this judgment, probably no worse than 90% scaling. This is a final check on those dimensions that might not be covered by the simple measurement.