Art 455 Holography Laboratory Procedure
Denisyuk Reflection Hologram

1. **Preparation**
   (a) Get key out of locker.
   (b) Hang key inside door knob (or put back in locker).
   (c) Turn on safelight in lab and 2 safelights in darkroom.
   (d) Turn on laser and unlock your locker.
   (e) Prepare Wet Lab
   Place marked trays in this order L to R: developer, stop bath, photoflo.
   Get EDTA tray for bleach out of the sink and place it next to the sink.
   Get TEA tray out of the sink and place it next to the sink.
   Mix Vitamin C with water at a 1:10 ratio and place it in white tray near light.
   Pour chemicals into marked trays.
   (f) Clean glass part of film holder in wet lab.

2. **Creating** Imagery
   (a) Create your set up. Put your objects in the object beam box.
   (b) Check that your object is well lit and close to the top of the box but does not hit the glass plate.

3. **Preparing** the Film
   (a) Choose which color you wish to do working from Red to Blue.
   (b) Place film in the TEA tray with the emulsion side down.
   (c) Flip the film after 1 minute.
   (d) Remove the film after a total of 2 minutes in the TEA.
   (e) Squeegy both sides of the film and dry it well.

4. **Exposing** the Film
   (a) Shutter the laser.
   (b) Turn off any lights in wet lab, workbench, classroom. Lock door to lab (horizontal is locked position). Shut both wet lab doors.
   (c) Load the film with the thin glass under the film and the thick glass on top of it.
   (d) Tap the glass and add putty in the corners to dampen out any vibrations.
   (e) Let film settle about 20 clock minutes.
   (f) Expose for _ seconds. (Determined in class.)

5. **Developing** the Film
   (a) Carefully remove glass from film holder **with fingers on both sides of glass**. Open glass and remove your film without touching the exposed area.
   (b) Rinse the film in water before putting it in the developer.
   (c) Place emulsion side down in developer tray. (Goggles, gloves and tongs are available for your use.) Develop for 3 minutes with continuous agitation turning film over once.
   (d) Move film into Stop Bath solution for 2 minutes.
   (e) Rinse in water for 1 minute (You can now turn on main lights.)
   (f) Move film into Bleach. Bleach until film is clear.
   (g) Rinse for 5 minutes.
   (h) Move film into Vitamin C. Turn on the light and flash the film with light using a dodging motion until film is light red/brown.
   (i) Rinse in water for 30 seconds.
   (j) Place film in Photo-Flo (to remove water spots) for 30 seconds if you want and hang film to dry.
   (k) Dry film. Air dry is best, but for time purposes you may use a hair dryer on lowest setting held about 1 foot away from the film.
   (l) Clean workbench putting away anything you used.

6. **Cleanup and Leaving**
   (a) Carefully pour chemicals back in their labeled bottles.
   (b) Rinse trays and wipe up spills.
   (c) Turn off LASER and **unplug hot glue gun**
   (d) Turn off 2 safe lights in wet lab, overhead lights in **Laser Lab**, and **classroom** lights.
   (e) Lock-up laser lab door and classroom door. Test outside lock on 136 HASKETT from hallway side. PUT KEY BACK IN LOCKER.