# ECE 6283
# Homework 2

Fall 2004 Dr. Havlicek

1. Consider the Gabor filterbank we have been discussing in class (see the class handouts available on the course web site) with an image size of $256 \times 256$ pixels. For the parameter choices $r_0 = 9.6$ cycles per image (cpi) $= 0.0375$ cycles per pixel, $R = 1.8$, $B = 1.0$, and $\eta = 0.5$, complete the design for the entire filterbank.

2. Show the log-magnitude spectra of all forty filters together in a single image. Use floating point calculations throughout and convert to unsigned char (byte) only at the very end to make the final image for display.

3. Apply this filterbank to a $256 \times 256$ floating point version of the *Lena* image. Show the real parts of all forty response images in a single figure. Carry out all calculations in floating point; convert to unsigned char (byte) only at the very end for display purposes.

**DUE: 9/30/2004**