ECE 532
Crystallography Project — Task 1
Due Sunday March 27

The purpose of thie exercise is to identify a pool of "good" features for the crystallography classification problem.

Each group should:

1. Propose at least four features for the purposes of distinguishing between Class 1 (clear drop) and Class 9 (excellent crystals).

2. Develop an automatic algorithm (that can be executed in Matlab as either an m-file or a mex-file) that extracts these features from a raw image. **Suggestion:** The boundary of the "dish" causes a very strong edge and shadow, which could be easily confused with the edges associated with crystals. When extracting features, your algorithm should take care to avoid the boundary.

3. Develop a simple classifier using multivariate Gaussians for the two class-conditional densities, and test the performance of your features by "training" and "testing" on separate halves of the available data. (You do not need to use all your proposed features if you find that some are unnecessary).

4. Develop a website for your project work. Report their proposed features and make their feature extraction at that website so that the entire class can review the proposals made by each group.