Homework Assignment Week 2 – Optics and Microscopy, EE 293
Due in one week

This assignment is due at the beginning of class 11.40am on Tuesday January 23th 2018 (or before)
If you cannot hand in your homework sheet in class in person, it is OK to email a picture/scan of the sheet with your solution to the Professor: sara@ucsc.edu

Consider a 60x objective with Numerical Aperture NA = 1.4. Let's say that this is an Olympus objective, then the Tube Lens has $f_{T.L.}$ = 180 mm

a) What is the focal length of the objective?

b) What is the maximum resolution you can expect to get when imaging with this objective, if all optics are perfect? Assume that you are imaging with green light.

c) Say that you find a thread adaptor and put this objective in a Nikon rig instead (modern Nikon scopes have has $f_{T.L.}$ = 200 mm). What is your effective magnification now?