

ECE 4119
Report Assignment 1

Write a report of classroom demonstration on Jan 29, 2015, involving the use of a camera. Your report should contain (maximum two pages, one page can be sufficient without figures):

1. An overall introduction describing of what was demonstrated in class for the purpose of what study topic. (what type of camera, what does it measure?...)
2. A more detailed description and explanation of the following demonstrations:
 - a. What do people images look like via the camera, how so? (was room light needed for the images?)
 - b. Two bottles of water, what was observed and why?
 - c. What happened when the soldering iron went from room temperature (75 F) to hot (700 F), what physical theory is best to described what observed. Let the soldering iron tip area be $\sim 1 \text{ cm}^2$, assume its emissivity be 0.7, calculate the thermal radiation power at room temperature and at maximum 700 F. Use the course lecture app to obtain its spectrum (for this, it is OK to use assumed emissivity of 1 in the app).
 - d. Describe without any need for explanation what was observed when a glass lens was put in front of the camera and when a Si lens was put in front of the camera.
3. A brief conclusion of what you think you learn from these demonstrations.

Do not forget to include your last name, first name, student ID at the top of your report. Please follow instruction on the course webpage about submitting your work electronically, which is encouraged.