

# ECE 491 Weekly Report    MAY1607    Week 4 (9/12/2015-9/19/2015)

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**Advisor:** Jaeyoun Kim

**Client:** Honeywell, FM&T

**Members (roles):** Gregory Kuhn (Weekly Report), Noah Bergman (Team Leader)

**Matthew Kelly (Key Concept Holder), Garrett Hembry (Webmaster)**

**Project Title: Microscope Embedded Display for Assembly Work Instructions**

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## Weekly Summary

The objective of this week was to practice using an electron microscope to better understand how it functions. We used a spare microscope in one of the Coover labs to see how an image would appear in the eyepieces of an electron microscope. We also examined how several of the buttons and knobs on the microscope would affect the brightness and overall quality of the image seen in the microscope.

## Meeting notes:

-This meeting was really a compilation of two meetings. Our first meeting took place in the TLA where we discussed the mechanism for displaying the instructions in the microscope eyepiece.

- The second meeting took place in a Coover laboratory where we experimented with an electron microscope.

## 9/18/15    Group Meeting In TLA and Coover Laboratory

**Duration:** 90 min.

**Members Present:** All

### **Purpose and Goals:**

The purpose of this meeting was twofold; our first objective was to decide upon a mechanism by which we could properly display instructions in the eyepiece of a microscope. The second was to experiment with the microscope in lab.

### **Achievements:**

In the first meeting session we decided that in order to properly display the instructions in the lenses we would add an extra pair of lenses to the microscope that would have different properties than the first and would display the instructions from the tablet in the lenses. The original pair would just view the specimen on the microscope frame. There would be a button on the microscope that when pressed would rapidly switch between the lenses. In lab we gained valuable hands on experience with using an electron microscope and experimenting with its properties but unfortunately we were not able to connect it with a projector.

## Pending issues

1. Purchase the exact model microscope we are to use for this project.
2. Research the schematic and the specific components required to build a heads up display.

## Plans for next week

Each team member is to research the physics behind mirrors, this is a requisite because we need to manipulate the size of the instructions as they are viewed in the eyepieces and the best way to do that would be via mirrors. Furthermore we are to look into the properties of microscope eyepieces and examine if they can be altered or adjusted in a way that would enable the instructions to be viewed in an easy and accessible manner in the eyepieces of the microscope.

## Individual Contributions (this week)

Gregory Kuhn-Continued Researching the technical aspects of the project.

Noah Bergman – Continued researching the technical aspects of the project and gained access of an electron microscope.

Matthew Kelly – Continued researching the technical aspects of the project and borrowed a heads up display.

Garrett Hembry- Continued researching the technical aspects of the project.

### **Total contributions for the project**

Noah Bergman-8hrs

Gregory Kuhn-8hrs

Matthew Kelly-8hrs

Garrett Hembry-8hrs