

# EE 491 Weekly Report    DEC15-17    Week 5 (2/16/15-2/22/15)

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**Advisors:** Dr. Ravi Hadimani and Neelam Prahbu      **Client:** Iowa State University  
**Members (roles):** Marion Okoth (Team Leader), Elizabeth Clarkin (Website) and Matthew Mulloy (Weekly Reports)  
**Project Title:** Magnetic Sensor Design.

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## Weekly Summary

The main goal this week was to finalize our project plan, demonstrate results for discussion, and produce a testable product.

## Meeting notes:

### 2/16 Group Meeting

**Duration:** 60 min      **Members Present:** All

- Discussed and worked on project plan

### 2/13 Group Meeting with Advisors

**Duration:** 60 min      **Members Present:** All

## Purpose and Goals:

Discussed finalization of project plan draft one, testing results

- Discussed using COMSOL verses MAGNET for simulation model
- Project plan draft edits and comments discusses
- Discussed coercivity and permeability in materials
- Discussed schematics verses the physics
- Discussed cost verses coercivity and the permanent magnet solution
- Reporting and dissemination of Gantt chart
- Hysteresis results, examining coercivity at origin for accuracy

## Pending issues

1. Starting the GUI
2. Cost of permanent magnets verses effectiveness
3. Hysteresis accuracy in testing
4. Effectiveness of solenoid solution
5. Waiting time for materials after fabrication

## **Plans for next week**

1. Matt: Will design the permanent magnet option in COMSOL and test the solenoid
2. Elizabeth: Will continue working on the website and continue working with MATLAB on the GUI for the software interface with the machine
3. Marion: Will continue testing materials and continue research into materials

## **Individual Contributions (this week)**

Matthew Mulloy: Attended the meetings, reading, COMSOL, project plan, weekly reports, solenoid creation. (11 hrs.)

Elizabeth Clarkin: Attended the meetings, website design, project plan, GUI (10.5 hrs.)

Marion Okoth: Attended meetings, project plan (8 hrs.)

## **Total contributions for the project**

Matthew Mulloy (38 hrs.)

Elizabeth Clarkin (38 hrs.)

Marion Okoth (39 hrs.)