

EE 491 Weekly Report DEC15-17 Week 25 (11/10/15-11/16/15)

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.

Weekly Summary

The main goal this week was to give our instructor presentation and review for final presentation.

Meeting notes:

11/12 [Group Meeting With Instructor](#)

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

Purpose and Goals:

The goal was give our presentation to instructor and receive feedback.

- Presentation (1 hour)
 - With interruptions for input and criticism
 - Introduction
 - Magnetic core used to amplify?
 - Energy input?
 - Have more detailed answers
 - Magnetic field
 - Current problem slide
 - Cross section image
 - Arrows in simulations
 - Show other options and simulations
 - Code
 - FFT not working
 - Add frequency to FFT for accurate output
 - Materials
 - Amplification issues
 - Standardize amplitudes (mV/kHz?)

11/16 Group Meeting with Advisors

Duration: 60 min

Members Present: All

Purpose and Goals:

This week's goal was to discuss instructor feedback.

- FFT works
- Amplification
 - Signal pulse creates change in magnetic field. This changes the magnetic moment in surrounding field. The change in the material as it returns to steady state identifies the material.
 - Coil detects signal in terms of voltage, detecting flux
 - Core contains magnetic field that can change rapidly to identify changes in magnetic flux
- mV/kHz is a figure of noise
- Build permanent magnet
- Start Poster

Pending issues

1. Final Presentation
2. Physical creation of design

Individual Contributions (this week)

Matthew Mulloy: Attended the meetings, design preparation, presentation, weekly report (8.5 hrs.)

Elizabeth Clarkin: Attended the meetings, GUI, presentation (6 hrs.)

Marion Okoth: Attended the meetings, presentation (4 hr.)

Total contributions this semester

Matthew Mulloy (80.5 hrs.)

Elizabeth Clarkin (69 hrs.)

Marion Okoth (57.5 hrs.)

Total contributions for the project

Matthew Mulloy (184 hrs.)

Elizabeth Clarkin (192 hrs.)

Marion Okoth (148 hrs.)