1. I have achieved all the learning objectives of this course through lab and project work. The first objective was written and oral technical communication skills. Helping to complete all proposals, technical writings, and technical presentations that were assigned to the group in class did this. Reviewing examples from our facilitator and referring to the requirements and previous semesters examples of similar documents helped complete the goal of good technical report writing. After helping and contributing to the team’s proposal, I have learned to write a well-done proposal with approval. The biggest challenge in the proposal was realizing the correct audience it was being written for, the sponsor. I learned how to create effective presentations in this class by making slides less wordy and broad while continuing to speak in depth about the specific topic. It was difficult to learn, but making sure to not read off the slides and talk to the audience was an important thing to do. Being able to find, access, and understand certain standards that involved our project was another thing that I learned. Researching numerous standards about cameras, frame rates, Matlab/Simulink software toolboxes, and power over Ethernet criteria is how I learned this. General work on our project, and composing the proposal, really help teach all of us about the design criteria behind the project. Researching all the costs and types of programming that would
need to be done for the project really helped us find out the reliability, safety, and true cost of the whole project. The design process starts by doing a lot of organization at the start. This is when you realize what sort of time tables the team will be working with, what the sponsor wants out of the project, who will contributing what to the project, and the main constraints of the potential design. Completing research on certain prototypes and realizing what the most difficult tasks will be is the next step. After this it is a matter of deciding what will ultimately work with all other costs and safety criteria that needs to be taken into account. Then building, testing, and rebuilding will follow right after this step followed by final reports. I understood contemporary industry practices by completing the application note assignment and doing research on how something can work in industry and explaining everything that can be accomplished by what was being described. Key tools in this design process include timetable charts to stay on schedule and most instruments/software’s contained in the lab computers to help complete the project. Team building, I learned, can have its ups and downs. A team depends on everyone to contribute, so if a member fails to show up or other members fail to ask for assistance, the team can be greatly hurt in means of productivity. Using the web and paper based reading materials; I was able to do numerous researches on the hardware and software portion of this project.

2. I have learned many things in completing my portion of the design project. My overall technical task was to determine how he could us Matlab/Simulink to properly detect and edge in a frame once the video was acquired from the given
hardware. I spent a long time researching the different types of edge detection codes were available in these software’s example databases online. Using the knowledge I gained, I worked with others on the team to help put all this code together with there parts to make it all function together. As milestones came up through the weeks, we all continued to work through certain parts of the project as the deadlines came through. Our design iterations worked well, until there was a delay from the sponsor in giving us the correct 1080p video of the steel roll footage.

3. I have helped prepare every assignment that was given to the team. This includes the Pre-proposal, Proposal, Oral Proposal Presentation, Design Issues Paper, Technical Presentation, Final Report, and Poster. I was a speaker in every presentation that the team had.

4. The impact of this course on my career objectives and professional goals is big. This class, along with the two internships I had, has shown me how to approach things in a professional matter. This includes everything from have presentations about new projects, to giving final reports and presenting your results from what you have acquired. This will help my professional goals by giving me a head start on all professional writing, which in turn will help me to be able to rise up through a company.

5. My primary strengths include staying motivated, focused, hard working, and organized. My weaknesses include getting nervous around higher-level co-workers/professor, and up until this class, being a good team player and my written communication skills.
6. In 5 years, after graduation, I hope to have a secure engineering job at an automotive company and to have earned a Masters degree in either business or engineering.

7. In order to achieve these goals I must first get an entry-level job at an automotive company. After this I would apply to numerous schools for either a business or engineering masters. After choosing a school, and completing all the needed courses, my goal will have been reached. Through this some life-long learning steps would be never stop learning, help teach others, and gain intelligent friends through my trip to achieve my goals.

Appendix:

Ian Siekkinen  
email: siekkin1@msu.edu

Objective:  
Secure an Electrical Engineering entry-level position within a company that will provide experience and room for advancement.

Education:  
Bachelors of Science  
Michigan State University, East Lansing, MI  
Electrical Engineering  
Cumulative GPA = 3.52

Experience:  
Summer 2014  
Nissan Technical Center NA, Internship: Farmington Hills, MI  
• Audio/IT Test  
  o Navigation, Bluetooth, Camera, Head Unit Functionality, Reception, Sound Quality  
  o NYC NAVI Design Verification Trip  
  o Vehicle Benchmarking

May 2013 – 2014  
Broad Art Museum at MSU  
• Art Gallery Guide  
  o Assist Visitors, General Cleaning
Summer 2012  Robert Bosch LLC, Internship: Farmington Hills, MI  
- Diesel/Gas Engine Control Systems (ECU Diagnostics, OBDII)  
  - Calibrate/Validate thresholds for Diesel Engine misfire diagnostic using created MATLAB script  
  - Analyzed INCA recorded data from ECU

Software Skills: MATLAB, NX 9.0, INCA, PSPICE, AutoCAD, Microsoft Office, Adobe

Professional Activities:  
MSU SAE Baja Racing Team Member (2 years):  
- Gauge design with Antenna Transmission  
  - Arduino and Xbee Chip Construction  
  - Speed and Heat Sensor wiring and coding  
  - Radio Headsets for Communication  
- Varied vehicle wiring, Headlamps, Brake Lamps and Engine Kill switches

IEEE- HKN Eta Kappa Nu (2 years):  
- 8x8 LED cube - Built, Constructed, and Programmed

Hobbies:  
- Car/Truck/Tractor performance & maintenance  
  - Diagnosed & replaced numerous parts on older vehicles e.g. Fuel pump, Coolant sensor, Shocks, Starters, Spark plugs/wires, Brakes, Intake/Exhaust.
- IM Soccer & Volleyball, Snowboarding, Golf