

ECE 385 – Spring 2016
Final Project Proposal
Due Week of April 4

Item	Points
Idea and Overview	2.0
Block Diagram	2.0
List of Features	2.0
Expected Difficulty and Justification	2.0
Proposed Timeline	2.0
Total	10.0

Overall expected length of proposal is 1-2 pages. Proposal is worth 10 points, taken out of the 30 points in your final project report.

1. Idea and Overview

This section should introduce your idea and give a description of what the project is. Describe in abstract (e.g. one or two paragraphs) what your finished project should accomplish. Key features should also be described here, and this should be of a reasonable technical depth to suggest that some thought and research was done to outline what the key components and engineering approaches are. If you plan on using an SoC, you should specify here which features will be implemented in hardware (SystemVerilog) and which features will be implemented in software (C code). You should also describe how the final demo will be carried out and what additional equipment you will expect to need. If you plan on using existing code/libraries, you should mention that here.

Example:

We propose to design and implement an Apple IIe computer on the FPGA as a System-on-chip. Our SoC will be based around a SystemVerilog 6502 CPU core which is found [here](#) (link). Additionally, we will implement using SystemVerilog essential components such as the System Bus, RAM, Video Display, Keyboard, and Emulated Disk Drives. Our design will also include a NIOS II CPU for the purposes of interfacing with the USB keyboard as in lab 8 to emulate the Apple keyboard. Our goal is to demonstrate our IIe SoC using the USB keyboard and VGA monitor, running a copy of The Oregon Trail.

2. Block Diagram

The block diagram should show a real design for your project. Each block should represent a different module in your top level diagram. It should be realistic and reasonable enough that it could actually be used as your top level design. While you do not need to include individual signals, your block diagram should include the general data-flow. For example, for an emulated Apple IIe computer above, you should show the system bus(es) and each module as required to accomplish the design.

3. List of Features

List the specific features that your project will compose of. Give a brief description of any features that may not be self-explanatory. **The features should at least be separated into two categories:**

- i. Baseline set of features for the project to be considered working
- ii. Additional features that may be implemented for extra difficulty

4. Expected Difficulty

What range of difficulty do you expect your baseline project to be? (on a scale of 0-10 points) What about the difficulty after implementing any additional features? Give a brief explanation of why the project is this level of difficulty. While your TA will be largely responsible for evaluating your project difficulty base on the final result for the purposes of grading, this is your opportunity to highlight those aspects of your project which may increase the difficulty that may not be initially obvious.

5. Proposed Timeline

Give a week-by-week plan of how you will achieve your final project goal. What do you propose to finish by each week? Be sure to state what you intend to achieve by the mid-project checkpoint.