

# Independent Study Plan - Field Programmable Gate Arrays

## Introduction

This is just a simple draft of what I plan to do next semester. This is all subject to change and serves as a basic guide to keep me on track.

## Topics

- Computational Arithmetic
  - Addition / Multiplication / Subtraction / Division
  - Calculus (Integration, Differentiation)
  - Polynomial Approximations
  - Trigonometric Approximations
  - Floating Point Math
- Digital Signal Processing
  - Digital Filters (IIR and FIR)
  - Fourier Transforms
- Digital Communication
  - Digital Modulation
  - More research required
- Serial Communications
  - Serial Peripheral Interface (SPI)
  - Universal Asynchronous Receiver / Transmitter (UART)
  - CAN controller
- Verification and Test Bench Design
- Synthesis tools

## **The Rest**

Thats it. No other plans besides topics.