

## Project Guidelines

### General Rules

1. The project can be a hardware application or simulation of a system using MATLAB for programming.
2. Each project should include at least three topics covered in the class. For eg. FFT, modulation and filters.
3. The Project should reflect at least 15-20 hours of work.
4. **MATLAB inbuilt functions cannot be used** in the program (except FFT).
5. A project report should be submitted at the end of semester on canvas. It is due on the final exam day of the class by 9pm.
6. A presentation of the project with about 5-8 slides should be presented in the class/ to the instructor. Each person gets 5-7 mins for the presentation and 3 mins for the Q&A.
7. For the final project submission, please submit your MATLAB code folder along with the report and presentation. Make a folder which has all Matlab files related to your project, zip it and then upload it to the dropbox.

### Project Report

The report should follow the following template:

1. Introduction
2. Theory – Description of the theoretical concepts involved in the project
3. Simulation – Describe the steps involved in simulation
4. Result – Figures with comments
5. Appendix – Code

### Project ideas

1. FFT Algorithms
2. Analyze, design and implement 1-d analog/digital filters
3. Analyze, design and implement 2-d(image) digital filters
4. Communication systems (AM, FM, PM)
5. Musical instruments tuning
6. Simple speech recognition
7. Popular theme song tunes

Tentative Dates for presentation: 21<sup>st</sup> November, 2018