

EC380 Mini Project 1 – Music Synthesizer

For mini project, you may work in groups of two or three (preferably 2). This MATLAB project will be part of your special problem grade for the course, and will be part of a sequence of mini projects leading up to a simple communication system.

Background:

For this mini project you will write a simple MATLAB program that synthesizes music with sinusoids. Starting with sheet music for Minuet in G, you will learn how to map each note on the staff to its frequency and duration and then have MATLAB generate a sinusoid for that note. Adding up all the sinusoids will generate a wave that when played through speakers will sound like Minuet in G. You will then save this file as a **wav** file and email it to me.

Approach

You will need to look at two places to learn how to do this mini project. The first will give you some hints on how to do the project; the second will give you the sheet music for Minuet in G.

1. Point your web browser to <http://yoder-3.institute.rose-hulman.edu/visible2/>. In the menu tree on the left, expand chapter **3**. Expand **Labs**, and click on **Lab04**. You do not have to do this lab, however it has many go ideas on how to do this mini project. Take a look at it.

A quick search for " Minuet in G Sheet Music" on Google found several hits. You are free to find you own sheet music.

This is a fun mini project. Start early so you have time to ask questions if needed. Once you have something working, create a **wav** file using MATLAB's **wavwrite** command. Note: For those who want to do more, wavwrite can write stereo files.

Due Date:

This assignment is due Tuesday 18-Mar-2003 before class, so I have time to gather all your wav files.

What is due:

1. wav file of your song
2. One page memo describing what you did. Highlight any **extras** you've added.
3. Your MATLAB code.

Zip (or rar) the above up into one file and email it to me (Mark.A.Yoder@Rose-Hulman.edu).