

MATH 668 Spring 2010

Instructor: Professor Stefen Hui, GMCS 621.

Office Hours: TuTh 1215PM-145PM

Prerequisites: Math 534A and Math 534B or consent of instructor.

Text: Gasquet & Witomski, Fourier Analysis and Applications, Springer

Main Topics:

- Fourier transform of integrable functions
- Fourier series
- Discrete Fourier transform
- The Fast Fourier Transform (FFT)
- Basic ideas in linear systems
- Basic ideas in signal processing

Homework: (70%) 6 to 8 assignments. The assignments will include both analytical and computational problems. The students will be expected to learn basic Matlab programming. Some problems in the homework assignments will require the use of Matlab. Students may consult each other on homework problems but each student *must* write up the solutions independently in his or her own words. In addition to learning the mathematical concepts, the student should also practice writing mathematics properly. The solutions should be complete, clear, and concise as if they are short technical reports. Try to use complete sentences and incorporate mathematical symbols, formulas, and equations into the sentence structure.

Final: (30%) This is a comprehensive final.

Grades: The grades will be determined by a modified curving procedure with the guarantee that: 90% - A, 80% - B, 70% - C, 60% - D, and below 50% - F.

Furlough Days: No classes on Feb 11, Mar 25