NOTES FOR THE FIRST HOUR EXAM

Spring 2014

The first hour exam will be held Wednesday, 26 Feb. during normal class hours. The exam will be closed book, closed note, laptop, cell phone. In short put everything away except a writing device. I will provide a list of formulae and results (such as equations for Fourier series and coefficients, lists of indefinite integrals, etc.) so that you do not need to memorize anything. Review previous years' hour exams to see what this list looks like.

The list of results will also include the results of indefinite integral that you might need for a Fourier series calculation, however you will need to know which integral to use, and know how to evaluate it at proper limmits, and how to determine the values of the coefficients.

The exam will cover all the material we have discussed in class, in computer lab, and assigned reading. On the exam, you will be expected to :

• Determine Fourier coefficients and Fourier series for series that are 2 p or 2 L periodic.You will also be expected to know how to find coefficients and Fourier series for complex Fourier series.

• Use and apply Dirichlet' s Theorem and Parseval' s Theorem.

• Prove identities using Einstein summation notation; if I ask that a question use summatition, no credit will be given if you provide the proof writing out explicit components term by term.

• There will be a Mathematica related question on the exam.This will involve writing a short program making use of the Mathematica functions we have studied in lab thus far this semester.During the exam, I will answer any question about how to indicate special characters in Mathemtica (i.e., ' how do you make the not - equal sign' (I will tell you "!=")); however, I will not answer questions regarding functions and processes such as' how do I integrate a function in Mathematica', which equal sign do I use in this case', or' how do I write a Do loop'?