

# Aero 320: Numerical Methods

## Lab Assignment 15

Fall 2013

### Problem 1

#### Least squares approximation of a continuous function

Find the least squares approximation of the form  $\hat{f}(x) = a_0 + \sum_{k=1}^n a_k \cos kx + b_k \sin kx$ , for the function

$$f(x) = \begin{cases} -1, & -\pi \leq x < 0, \\ +1, & 0 \leq x \leq \pi. \end{cases}$$