Announcing

a Master’s Thesis Defense
Friday, June 10th at 2:00 pm
Southern Hall 303
at The University of Southern Mississippi

Speaker: Megan Richardson
Department of Mathematics
University of Southern Mississippi

Title: A Comparison of Two Different Methods for Solving Biharmonic Boundary Value Problems

Abstract:
We use the methods of compactly supported radial basis functions (CS-RBFs) and Delta-shaped basis functions (DBFs) to obtain the numerical solution of a two dimensional biharmonic boundary value problem. The biharmonic equation is difficult to solve due to its existing fourth order derivatives, besides it requires more than one boundary conditions on the same part of the boundary. In this thesis, we use either a one-level or a two-level technique for constructing the approximate solution in the context of Kansa’s collocation method. This thesis will compare the accuracy of the methods of CS-RBFs and DBFs when applied to the biharmonic boundary value problem. Both methods can be used on an irregular shaped domain. Numerical results show that the DBF approach is superior than that of the CS-RBF.

Further Information
Further details and information about this and other departmental activities is available online at http://www.math.usm.edu/bulletin_board/.