

Math Department Fall Seminar

Wednesday, Oct 19, 2011
1:30pm Room 518

Speaker: **Kent Kidman**

Title: **Analysis of Algorithms**

Abstract:

We review different asymptotic notations for functions defined on the positive integers: $O(f(n))$, $\Theta(f(n))$, $\Omega(f(n))$, etc. We then look to calculate the running time of an algorithm asymptotically. We concentrate on “divide and conquer” algorithms, which can sometimes reduce the running time. We talk about the Master Theorem of these divide and conquer algorithms, and sketch a proof. We use this method to describe the algorithm for the Fast Fourier Transform. To end, we give an algorithm that calculates the minimal polynomial of a square matrix without calculating the eigenvalues or the characteristic polynomial of the matrix.

Everyone is welcome.