

University of Notre Dame Department of Mathematics
MATHEMATICS TEACHING SEMINAR

Youngho Yoon and Jeff Madsen

University of Notre Dame

Will give a lecture entitled:

**Local Maximum and Local Minimum, Take II
and
Arc Length, Take II**

On

Tuesday, April 12, 2011

At

5:00 PM

In

231 Hayes-Healy Hall

Abstract

Youngho Yoon will present “Local Maximum and Local Minimum”: In calculus course we can find a way to calculate maximum or minimum values of a function as an application of derivative of multivariable function. The first step of this is finding local maximum and local minimum. I will discuss how to find these.

Jeff Madsen will present “Arc Length”: We know how to use calculus to compute the distance traveled in a straight line. What if we're moving in two dimensions? This requires us to calculate the arc length, that is, the length of a segment of a plane curve. For some curves, such as the circle, we already know a formula for arc length. But what exactly do we mean by the length of a curve, and how do we derive the formula? We will use Riemann sums and integrals to first precisely define and then obtain a formula for the arc length of a curve which is defined by a smooth function.