Syllabus for Paul Dawkins Math 2413

This is the order of topics that I hope to follow this semester.

Topic

Review*

Functions Inverse Functions Trig Functions Solving Trig Equations **Exponential Functions** Logarithm Functions **Exponential and Logarithm Equations Common Graphs**

Limits

Tangent Lines and Rates of Change The Limit **One-Sided Limits Limit Properties Computing Limits** Infinite Limits Limits At Infinity, Part I Limits At Infinity, Part II Continuity The Definition of the Limit**

Derivatives

The Definition of the Derivative Interpretation of the Derivatives Exam 1 - Tentative Date : February 19, 2019 **Differentiation Formulas Product and Quotient Rule Derivatives of Trig Functions** Derivatives of Exp. and Log. Functions **Derivatives of Inverse Trig Functions** Derivatives of Hyperbolic Trig Functions** Chain Rule Implicit Differentiation **Related Rates Higher Order Derivatives** Logarithmic Differentiation*** Exam 2 - Tentative Date : March 21, 2019

Applications of Derivatives

Rates of Change** Critical Points Minimum and Maximum Values Finding Absolute Extrema The Shape of a Graph, Part I The Shape of a Graph, Part II The Mean Value Theorem Optimization Indeterminate Forms and L'Hospital's Rule Linear Approximations Differentials Newton's Method** Business Applications***

Exam 3 - Tentative Date : April 11, 2019

Integrals

Indefinite Integrals Computing Indefinite Integrals Substitution Rule for Indefinite Integrals More Substitution Rule Area Problem The Definition of the Definite Integral Computing Definite Integrals Substitution Rule for Definite Integrals

Applications of Integrals

Average Function Value*** Area Between Curves Volumes of Revolution Using Rings Volumes of Revolution Using Cylinders More Volume Problems** Work**

Exam 4 - Tentative Date : May 2, 2019

- * Several sections of this chapter are briefly covered during the first few days of each semester. The exact sections covered varies from semester to semester.
- ** These sections are on the syllabus and but are only covered if I have the time.
- *** These sections are not on the syllabus and while I'd like to cover them I never have the time.