Math 1261

Survey of Calculus

Master Syllabus

Valdosta State University

Mathematics Department

Math 1261 is a 3 credit hour course.

Prerequisites:
Math 1101(Math Modeling) or Math 1111(College Algebra) with a grade of C or better)

Course Description:
This course is an introduction to basic calculus with emphasis on applications in

General Outline of Topics

1.) Functions and Graphs.
Graphs of functions including Quadratic, Rational, Exponential, and Logarithm functions
Identify asymptote lines
Applications of Exponential and Logarithm functions including growth, decay, compound interest, investment, and half-life.

2.) Limits and Derivatives
Analysis of a limit & One-sided limits.
Limit Properties
Difference Quotient
Limits to infinity and Infinite limits
Continuity & Partition Number
Average & Instantaneous Rate of Change
Slope of the tangent line
Sales Analysis
Differentiation Properties – Power Rule, Sum & Difference
Instantaneous velocity
Marginal Analysis
   o Cost, Revenue, Profit functions
   o Exact, Marginal, and Average Cost, Revenue & Profit

3.) Additional Derivative Topics
Graphing Growth functions
Derivatives of Exponential and Logarithm functions
   o Review of Logarithm Laws and Properties
Product and Quotient Rules with Applications
The Chain Rule
Implicit Differentiation

4.) Graphing and Higher Derivatives
Increasing & Decreasing Intervals on a graph

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