2013-2014 SYLLABUS
INTRODUCTION TO CALCULUS

Kellenberg Memorial High School

Revised, August, 2013

Textbook: **Calculus (8th Edition) Larson, Hofstetler, Edwards**

Calculator – TI-84 Plus, Silver Edition

First Trimester:

Chapter P – Preparation

	Using the TI-84 Plus Silver Edition Calculator	1 week
	[Including graphing, solving, tables, functions]	
P.1	Graphs and Models	3 days
P.2	Linear Models and Rates of Change	3 days [Test]
P.3	Functions and Their Graphs	4 days
P.4	Fitting Models to Data	3 days [Test]

Early-October

Chapter 1 - Limits and Their Properties

1.1	A Preview of Calculus	2 days
1.2	Finding Limits Graphically and Numerically	3 days
1.3	Evaluating Limits Analytically	1 week [Test]
1.4	Continuity and One-Sided Limits	1 week
1.5	Infinite Limits	3 days [Test]

End of October

Chapter 2 - Differentiation

2.1	The Derivative and the Tangent Line Problem	3 days
2.2	Basic Differentiation Rules and Rates of Change	1 week
2.3	Product and Quotient Rules and Higher-Order Derivatives	1 week [Test]
2.4	The Chain Rule	3 days
2.5	Implicit Differentiation	2 days [Test]

Mid-December

Second Trimester

Chapter 2 – Differentiation

2.6	Related Rates	4 days [Test]

Chapter 3 - Applications of Differentiation

3.1	Extrema on an Interval	2 days
3.2	Rolle's Theorem and the Mean Value Theorem	2 days
3.3	Increasing and Decreasing Functions and the First Derivative Test	2 days
3.4	Concavity and the Second Derivative Test	2 days
3.5	Limits at Infinity	2 days
3.6	A Summary of Curve Sketching	3 days [Test]
3.7	Optimization Problems	1 week
3.8	Newton's Method	2 days
3.9	Differentials	3 days [Test]
		Mid-February

Chapter 4 - Integration

4.1	Antiderivatives and Indefinite Integration	3days
4.2	Area	2 days
4.3	Riemann Sums and Definite Integrals	2 days
4.4	The Fundamental Theorem of Calculus	2days [Test]
4.5	Integration by Substitution	3 days
4.6	Numerical Integration	2 days [Test]
		Late March

Chapter 5 - Logarithmic, Exponential and Other Transcendental Functions

5.1	The Natural Logarithmic Function: Differentiation	2 days
5.2	The Natural Logarithmic Function: Integration	2 days
5.3	Inverse Functions	2 days
5.4	Exponential Functions: Differentiation and Integration	2 days [Test]
		Early-April

Third Trimester:

5.5	Bases Other Than e and Applications	As Time Permits
5.6	Inverse Trigonometric Functions: Differentiation	As Time Permits
5.7	Inverse Trigonometric Functions: Integration	As Time Permits
5.8	Hyperbolic Functions	As Time Permits

Chapter 7 - Applications of Integration

7.1	Area of a Region between Two Curves	As Time Permits
7.2	Volume: The Disk Method	As Time Permits
7.3	Volume: The Shell Method	As Time Permits