

Squalicum High

Calculus 2017/2018

Mr. Ottum

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Syllabus

Welcome! I am looking forward to working with you this year. Calculus takes a step beyond the mathematics you have done so far to unleash powerful tools to interpret changing situations. In this course we will explore many topics typically in a college Calculus I class, and a little bit more. Our goal is to dig deep into the core concepts and develop a rich understanding of the key ideas of Calculus.

Course Outline:

Describing Change in Functions and Graphs

- Rates of Change Including Average Rate
- Increase/Decrease, Max/Min, Concavity
- Points of Inflection and Critical Points
- Functions and their Graphs

Limits

- Finding Limits Graphically and Numerically
- Evaluating Limits Analytically
- Continuity
- The Intermediate Value Theorem
- Infinite Limits

Differentiation

- The Difference Quotient and Definition of a Derivative
- Basic Differentiation Rules and Rates of Change
- The Product and Quotient Rules
- The Chain Rule
- Implicit Differentiation

Applications of Differentiation

- Relating Derivatives to Graphs
- Derivative Tests for Rates of Change
- Rolle's Theorem and the Mean Value Theorem
- Optimization
- Related Rates
- L'Hospital's Rule for Limits

Academic Expectations: This is a participatory class and subject – students will learn more by *doing* math. Completing each activity and assignment with curiosity and rigor is essential to understand our content. Students are encouraged to establish study groups and arrange times outside of class for supplemental help from the teacher. Following an excused absence, students will be responsible for obtaining and completing missed assignments. This includes school related absences for sports, music, leadership, etc.

Grading is distributed as follows:



Tests: Tests will be taken both individually and in teams. Students will arrange a time outside of class to make up tests missed because of an absence. Up to half of missed points on an individual test can be regained through corrections.

Assignments and Projects: These include daily individual and teamwork. It is essential to keep current with daily work, as this is the best way to build skills and understanding. Late work will receive partial credit.

GRADING SCALE FOR CALCULUS

A- 90-92%	A 93-100%	
B- 80-82%	B 83-86%	B+ 87-89%
C- 70-72%	C 73-76%	C+ 77-79%
F Below 60%	D 60-69%	

Classroom Expectations: Our classroom will be a safe and positive place for learning. We are all expected to...

- begin class promptly and ready to participate in learning.
- dress appropriately and put away any unnecessary food or electronic devices.
- engage in the lesson throughout the period.

Everything we do will show respect for ourselves, each other, and the school.

Materials: Each student will need...

- a bound notebook for notes (spiral bound notebook, composition book, etc. – preferably graph paper)
- graph paper for assignments
- a graphing calculator (TI-83 or TI-84 preferred)

Examples:



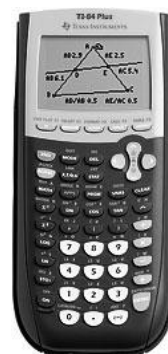
Spiral Notebook



Composition Book



TI-83



TI-84 Plus

