Classical Magnet School

Course: Calculus

	Sept	Oct	Nov	Dec	Jan	Feb	March	April	May	June
Textbook Chapters	Chapter 1	Chapters 2 & 3	Chapter 3	Chapters 3 & 4	Chapter 4	Chapters 4 & 5	Chapters 5 & 6	Chapters 6 & 7	Chapters 7 & 8	Chapter 9
Other Major Readings	Joe Cron's AP Calculus review sheet 1 George Polya's "How to Solve It"	Joe Cron's AP Calculus review sheet 2 George Polya's "How to Solve It"	Joe Cron's AP Calculus review sheet 3 George Polya's "How to Solve It"	Joe Cron's AP Calculus review sheet 4 George Polya's "How to Solve It"	Joe Cron's AP Calculus review sheet 5 George Polya's "How to Solve It"	Joe Cron's AP Calculus review sheet 6 George Polya's "How to Solve It"	Joe Cron's AP Calculus review sheet 7 George Polya's "How to Solve It"	Joe Cron's AP Calculus review sheet 8 George Polya's "How to Solve It"	Joe Cron's AP Calculus review sheet 9 George Polya's "How to Solve It"	
Essential Questions	How do we measure change?	How can we understand something that is infinite?	How do we measure change?		How does Calculus enhance our understanding of science?	1. How do you quantify something that seems immeasurable? 2. How good is good enough?		How does Calculus enhance our understanding of science?	How can we understand something that is infinite?	How does Calculus enhance our understanding of science?
Standards	This course addresses standards of the State of CT and of the National Council of Teachers of Mathematics. Those addressed most notably are listed here. NCTM: All students should…understand relations and functions and select, convert flexibly among, and use various representations for them. …analyze functions of one variable by investigating rates of change, intercepts, zeros, asymptotes, and local and global behavior. … approximate and interpret rates of change from graphical and numerical data. … use symbolic expressions, including iterative and recursive forms, to represent relationships arising from various contexts.									
Major Skills	1. Find and interpret rate of change and slope. 2. Solve and graph both linear and non-linear equations.	1. Find limits 2. Analyze end behavior. 3. Determine continuity.	1. Find basic derivatives.	1. Find more advanced derivatives. 2. Use derivatives to analyze a function's behavior.	1. Use derivatives to solve application problems. 2. Approximate the zeros of a function.	1. Approximate the area under a curve. 2. Use definite integrals to calculate the area under a curve.	1. Apply the Fundamental Theorem of Calculus. 2. Construct antiderivatives.	1. Apply integration to a variety of application problems.	1. Define sequences and find their limits. 2. Analyze indeterminate and infinite limits.	1. Approximate functions with an infinite series.
Themes/ Topics	Prerequisites for Calculus	Limits and Continuity	Derivatives	Derivatives/Applications of Derivatives	Applications of Derivatives	The Definite Integral	The Definite Integral/Differential Equations and Mathematical Modeling.	Differential Equations and Mathematical Modeling/Applications of Definite Integrals	Applications of Definite Integrals/ Sequences, L'Hopital's Rule, and Improper Integrals.	Infinite Series
Field Trips / Guest Speakers										Alternative energy expert from UTC
Coached Projects										
Seminars	"Stand and Deliver" – how much work are you prepared to do to pass the AP exam?		Solution analysis seminar: using derivatives: which of three solutions is best and why?	Solution analysis seminar: apply derivatives: which of three solutions is best and why?						
Other										