HOSTOS COMMUNITY COLLEGE
DEPARTMENT OF MATHEMATICS

MAT 210	**CALCULUS I**
CREDIT HOURS:	**4.0**
EQUATED HOURS:	**4.0**
CLASS HOURS:	**6.0**
PREREQUISITE:	**MAT 160 or by placement**
REQUIRED TEXTS:	**Thomas: Calculus, Part one 11th Edition, Prentice Hall, 2009 Addison Wesley**
DESCRIPTION:	**This course provides provides skills in calculus in one real variable. Topics: limits, continuity, differentiation, applications to motion problems, maximum-minimum problems, curve sketching, antiderivatives, definite integrals, conic sections, polar coordinates and introduction to vectors.**
EXAMINATIONS:	**A minimum of four partial tests and a comprehensive final examination.**
GRADES:	**A, A^-, B^+, B, B^-, C^+, C, D, I, F.**

MAT 210 CALCULUS I

COURSE OUTLINE

Topic	Suggested number of sessions
Real numbers, Inequalities, Absolute value, distance, Circles, Linear Equations I and II lines	2
Functions, Domain and Range, Composition, Trigonometric Functions, Radians, Basic Trig. Identities	1
Tangent Line problem	1.5
Introduction to limits, properties of limits, $\lim_{x \to x} \frac{\sin x}{x}$	2
One- sided limits, continuity	2
Formal definition of limit	1
Some rules for differentiation	2.5
Derivative as velocity	1
Chain rule and power rule	2
Derivatives of 6 trigonometric functions	1.5
Higher order derivatives, implicit differentiation	2
Rational exponents; inverse functions	1
Differentials	1
Related rates/optimization	1
Continuous function on closed interval	1
Applied max-min problems	2

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COURSE OUTLINE (CON'D)

Topic	Suggested number of sessions
Mean Value Theorem	1
Increasing and decreasing functions, relative extrema	2.5
Concavity and Second Derivative Test	1
Horizontal and Vertical Asymptotes	1
Curve sketching	2
Indeterminate Forms: L 'Hospitals' Rule	1
Antiderivatives	2
Area; Approximating sums	2
Riemann sums, definition and properties of definite integral	1
Fundamental Theorem of Calculus	1
Conics	6
Conics in Rotated Coordinates	3
2-D vectors	3