

HOSTOS COMMUNITY COLLEGE
DEPARTMENT OF MATHEMATICS

MAT 310	CALCULUS III
CREDIT HOURS:	4.0
EQUATED HOURS:	4.0
CLASS HOURS:	4.0
PREREQUISITE:	MAT 220, Calculus II with a grade of C or higher
REQUIRED TEXTS:	Thomas: <u>Calculus</u>, Part two 11th Edition, Prentice Hall, 2009 Addison Wesley.
DESCRIPTION:	This course provides skills in infinite series, geometry in the plane and space, and integral calculus in several variables. Topics: vectors, infinite series, solid analytic geometry, polar coordinates, partial derivatives, multiple integral with applications, Taylor's theorem and convergence tests.
EXAMINATIONS:	A minimum of four partial tests and a comprehensive final examination.
GRADES:	A, A⁻, B⁺, B, B⁻, C⁺, C, D, I, F.

MAT 310

COURSE OUTLINE

Text: Edward & Penny: Calculus-Prentice Hall, 2002

<u>Topics</u>	Suggested # of Sessions
Vector in the plane, geometric and analytic Descriptions	1
Dot product	1
Vectors in space, cross product	2
Equations of lines and planes	2
Quadric surfaces and cylinders	1
Cylindrical and spherical coordinates & Curves in space	1
Vector-valued functions: Algebra, limits, continuity	1
Derivatives & integrals of vector function, tangent vectors and length	1
Limits, continuity, functions of several variables and their graphs	2
Partial differentiation	1
Tangent planes, relative and absolute extrema	1.5
Approximation and differentials	1
Chain Rules	2
Directional derivatives, gradient, differentiability	2
Double integrals over rectangles and more general regions	2
Double integrals in polar coordinates	1

Center of mass, surface area	2
Triple integrals	1
Triple integrals in cylindrical & spherical coordinates	1
Taylor polynomial Taylor's Theorem and applications	2
Infinite sequences	2
Infinite series	1
Integral and comparison tests	2
Ratio and root tests	1
Absolute and conditional convergence, alternating series	1
Power series, representing function as power series	1
Differentiation and integration of power series	1
Taylor and Maclaurin series	1
Binomial Series	1