

MATHEMATICS 302 A2
FALL SEMESTER 1991-92

TITLE: INTERMEDIATE CALCULUS I

SCHEDULE: Class: Monday, Wednesday 1:00 pm - 1:50 pm
Thursday 3:00 pm - 3:50 pm
Seminar: Thursday 4:00 pm - 4:50 pm

INSTRUCTOR: Dr. Subhash Karnik
Office: J206
Extension: 2093

TEXT: i) James Stewart : Calculus with Analytic Geometry
ii) Student's solution manual to accompany (i)

MARKING: Final 35%
Term test 1 20%
Term test 2 20%
Quizzes 15%
Assignments 10%

MATHEMATICS 302

MA 302: Intermediate Calculus I 3 (3-0-0) UT (3)

Infinite Series. Plane curves and polar co-ordinates. Vectors and three dimensional analytic geometry. Partial derivatives.

Prerequisite

Math 204 or equivalent. This course may not be taken for credit if credit has already been attained in Math 307 or Math 315.

Detailed Description

Infinite sequences. Convergent or divergent infinite series. Positive term series. Alternating series. Absolute convergence. Power series. Taylor and Maclaurin series.

Plane curves. Tangent lines to curves. Polar co-ordinate systems. Polar equations of conics. Areas in polar co-ordinates. Lengths of curves. Surfaces of revolution.

Vectors in two and three dimensions. Vector product. Lines in space. Planes. Cylinders and surfaces of revolution. Quadric surfaces. Cylindrical and spherical co-ordinates.

Functions of several variables. Limits and continuity. Partial derivatives. Increments and differentials. The chain rule. Directional derivatives. Tangent planes and normal lines to surfaces. Extrema of functions of several variables. Lagrange multipliers.