MATH 2433 - Calculus and Analytic Geometry III.
Spring 1999

1997-1999 Catalog Data: 2433 Calculus and Analytic Geometry III. Prerequisite: 2423. Polar coordinates, parametric equations, sequences, infinite series, vector analysis. (F, Sp, Su)

Prerequisite: MATH 2423.


References:

Course Objectives: This course serves as a bridge between single and multivariable calculus. Students will learn the basic concepts concerning parametric equations, sequences and infinite series, three-dimensional coordinate systems and vectors

Coordinator: Kevin A. Grasse

Prerequisites by Topic: See topics for MATH 2423

Topics:
1. Curves defined by parametric equations
2. Tangents to and areas enclosed by parametric curves
3. Polar coordinates
4. Sequences and series
5. Tests for convergence of series (integral test, comparison test, root/ratio test, etc.)
6. Power series, Taylor and MacLaurin series
7. Three-dimensional coordinate systems and vectors
8. Vector dot and cross products, equations of lines and planes
9. Quadric surfaces
10. Vector functions, arc length, space curves (velocity and acceleration)
11. Cylindrical and spherical coordinates

Schedule: Three 50 minute lectures per week

Computer Usage: The software package Mathematica is used in selected sections

Design Projects: Laboratory Projects:

Written and/or Oral Communications:

Teamwork: Group work is used in selected sections

Assessment Methods Used: Standard course evaluation

Contribution to Professional Component: 0%

Program Objectives : Related Strategy and Actions: 1.i

ABET 2000 Criterion 3 Contents: a

Prepared by Kevin A. Grasse Date April 8, 1999