Calculus III–Math 2243

Effective: Summer 2005

Course: Math 2243, Calculus III

Text: *Calculus*, Fifth Edition, James Stewart, Brooks/Cole, ISBN: 0-534-39339-X

Related Web Sites:

- `www.iLrn.com`
- `www.stewartcalculus.com`
- `mycourse.thomsonlearning.com`

Lab Text (optional): *Multivariable Calculus*, Art Belmonte and Philip Yasskin, Brooks/Cole, ISBN: 0-534-36444-6

Section	Required/Optional	Comments/Suggested Exercises
13 Vectors and the Geometry of Space		
13.1 Three-Dimensional Coordinate Systems	Cover	
13.2 Vectors	Cover	
13.3 The Dot Product	Cover	
13.4 The Cross Product	Cover	
13.5 Equations of Lines and Planes	Cover	
13.6 Cylinders and Quadric Surfaces	Cover lightly	
13.7 Cylindrical and Spherical Coordinates	Cover lightly	
14 Vector Functions		
14.1 Vector Functions and Space Curves	Cover	
14.2 Derivatives and Integrals of Vector Functions	Cover	
14.3 Arc Length and Curvature	Cover lightly	
14.4 Motion in Space: Velocity and Acceleration	Optional	

15 Partial Derivatives	
15.1 Functions of Several Variables	Cover
15.2 Limits and Continuity	Cover
15.3 Partial Derivatives	Cover
15.4 Tangent Planes and Linear Approximations	Cover
15.5 The Chain Rule	Cover
15.6 Directional Derivatives and the Gradient Vector	Cover
15.7 Maximum and Minimum Values	Cover
15.8 Lagrange Multipliers	Cover
16 Multiple Integrals	
16.1 Double Integrals over Rectangles	Cover
16.2 Iterated Integrals	Cover
16.3 Double Integrals over General Regions	Cover
16.4 Double Integrals in Polar Coordinates	Cover lightly
16.5 Applications of Double Integrals	Cover lightly
16.6 Surface Area	Cover lightly
16.7 Triple Integrals	Cover
16.8 Triple Integrals in Cylindrical and Spherical Coordinates	Cover lightly or Omit
16.9 Change of Variables in Multiple Integrals	Cover lightly or Omit
17 Vector Calculus	
17.1 Vector Fields	Cover
17.2 Line Integrals	Cover
17.3 The Fundamental Theorem for Line Integrals	Cover
17.4 Green's Theorem	Cover
17.5 Curl and Divergence	Cover
17.6 Parametric Surfaces and Their Areas	Cover
17.7 Surface Integrals	Cover lightly
17.8 Stokes' Theorem	Cover
17.9 The Divergence Theorem	Cover
17.10 Summary	Cover lightly or Omit