OFFICIAL SYLLABUS
MATH 250 - CALCULUS III

(Adopted - Fall 2010; Committee: Z. Agustin, G. Pelekanos, S. Staples) (Updated Fall 2021 to reflect ninth edition of textbook.)

Textbook: Calculus, Early Transcendentals, Ninth Edition, by J. Stewart, D. Clegg, & S. Watson with Webassign

Ch.12. Vectors and the Geometry of Space

12.1 Three-Dimensional Coordinate Systems
12.2 Vectors
12.3 The Dot Product
12.4 The Cross Product
12.5 Equations of Lines and Planes
12.6 Cylinders and Quadric Surfaces

Ch.13. Vector Functions

13.1 Vector Functions and Space Curves
13.2 Derivatives and Integrals of Vector Functions
13.3 Arc Length and Curvature
13.4 Motion in Space: Velocity and Acceleration

Ch.14. Partial Derivatives

14.1 Functions of Several Variables
14.2 Limits and Continuity
14.3 Partial Derivatives
14.4 Tangent Planes and Linear Approximations
14.5 The Chain Rule
14.6 Directional Derivatives and the Gradient Vector
14.7 Maximum and Minimum Values
14.8 Lagrange Multipliers:

Ch.15. Multiple Integrals

15.1 Double Integrals over Rectangles
15.2 Double Integrals over General Regions
15.3 Double Integrals in Polar Coordinates
15.4 Applications of Double Integrals
15.5 Surface area
15.6 Triple Integrals
15.7 Triple Integrals in Cylindrical Coordinates
15.8 Triple Integrals in Spherical Coordinates
15.9 Change of Variables in Multiple Integrals

Ch.16. Vector Calculus

16.1 Vector Fields
16.2 Line Integrals
16.3 The Fundamental Theorem for Line Integrals
16.4 Green's Theorem
16.5 Curl and Divergence
16.6 Parametric Surfaces and Their Areas
16.7 Surface Integrals
16.8 Stokes' Theorem
16.9 The Divergence Theorem

Any instructor should cover all of the material specified; additional sections are optional.