

Instructor: Medvinsky Michael

Description of 1321:

Completion of Math 1321 is equivalent to completing the entire three semester Calculus I, II, III sequence. Vectors in the plane and in 3-space, differential calculus in several variables, integration and its applications in several variables, vector fields, and line, surface and volume integrals, Green's and Stokes Theorems.

**Tentative Week-by-Week Guide of Textbook Sections.
(it will be Adjusted Based on the Progress of the Course)**

- Week 1 (01/06-01/10):** 8.1- 8.3 Sequences, Series, Convergence Tests for Series, Estimating Sums
- Week 2 (01/13-01/17):** 8.4-8.6 Power Series, Representing Functions with Power Series,
- Week 3 (01/20-01/24):** 8.7-8, 9.1-9.2 Taylor and Maclaurin Series, Applications of Taylor Polynomials
- Week 4 (01/27-01/31):** 9.3-9.5 Three Dimensional Coordinates, Vectors, Dot Product
- Week 5 (02/03-02/07):** 9.4,9.5 Cross Product, Equations of Lines and Planes
- Week 6 (02/10-02/14):** 9.6,9.7, 10.1-10.3 Functions and Surfaces, Spherical and Cylindrical Coordinates, Vector Functions and Space Curves, Derivatives and Integrals of Vector Functions, Arc Length, Curvature
- Week 7 (02/17-02/21):** 10.4-10.5, 11.1-11.2 Velocity, Acceleration, Parametric Surfaces, Functions of Several Variables, Limits
- Week 8 (02/24-02/28):** 11.3-11.6 Partial Derivatives, Tangent Planes, Linear Approximation, Chain Rule, Directional Derivative, Gradient Vector
- Week 9 (03/03-03/07):** 11.7-11.8, 12.1-12.3 Maximum and Minimum Values, Lagrange Multipliers, Double integrals, Iterated Integrals, Integration over general regions
- Week 10 (03/17-03/21):** 12.4-9 , Integrals in Polar Coordinates, Applications, Surface Area, Triple Integrals, Cylindrical/Spherical Coordinate Integrals, Change of Variables, Jacobians
- Week 11 (03/24-03/28):** 13.1-3, Vector Fields, Line Integrals, Fundamental Theorem of Line Integrals
- Week 12 (03/30-04/04):** 13.4-6, Green's Theorem, Curl and Divergence, Surface Integrals
- Week 13 (04/07-04/11):** 13.7-8, Stokes' Theorem, Divergence Theorem, Summary
- Week 14 (04/14-04/18):** Review
- Week 15 (04/21-04/23):** Review