

## Math 251 Suggested Weekly Schedule

- Week 1
  - Course introduction
  - Three dimensional coordinate systems (12.1)
  - Vectors (12.2)
  - The dot product (12.3)
  - The cross product (12.4)
- Week 2
  - Equations of lines and planes (12.5)
  - Cylinders and quadric surfaces (12.6)
  - Vector functions and space curves (13.1)
- Week 3
  - Derivatives and integrals of vector-functions (13.2)
  - Arc length, curvature, torsion (13.3)
  - Motion in space: displacement, velocity, and acceleration (13.4)
- Week 4
  - Functions of several variables (14.1)
  - Limits and continuity (*briefly*) (14.2)
  - Partial derivatives (14.3)
  - **Exam 1** (covers through Section 13.4)
- Week 5
  - Tangent planes and Linear Approximation (14.4)
  - The chain rule (14.5)
  - Directional derivatives and the gradient vector (14.6)
- Week 6
  - Maximum and minimum values (14.7)
  - Lagrange multipliers (14.8)
- Week 7
  - Double integral over rectangles (15.1)
  - Double integral over general regions (15.2)
  - Polar coordinates (10.3) and Double integrals in polar coordinates (15.3)

- Week 8
  - Applications of double integrals (15.4)
  - **Exam 2** (covers through Section 15.3)
- Week 9
  - Triple integrals (15.6)
  - Triple integrals in cylindrical coordinates (including applications of triple integral)(15.7)
  - Triple integrals in spherical coordinates (15.8)
- Week 10
  - Change of Variables in Multiple Integrals, Jacobians (15.9)
  - Vector fields (16.1)
  - Line integrals (16.2)
- Week 11
  - Curl and divergence (16.5)
  - Fundamental theorem of line integrals (16.3)
  - Green's theorem (16.4)
- Week 12
  - Parametric surfaces and their area (15.5, 16.6)
  - Surface integrals (16.7)
  - **Exam 3** (covers through Section 16.2 and Section 16.5)
- Week 13
  - Continue 16.7
  - Note:** Thanksgiving falls on this week in the fall.
- Week 14
  - Stokes' Theorem (16.8)
  - The Divergence Theorem (16.9)
  - Note:** Instructors should be wary of redefined days in week 15 and adjust their coverage of topics accordingly.
- Week 15
  - Continue 16.9
  - Review for final.
  - Note:** Last week of class has redefined days. See important Dates for more details.