| Monday | Wednesday | Thursday | Friday |
|---|---|---|---|
| | 23-Jan | 24-Jan | 25-Jan |
| | Syllabus Overview + 12.1 (Functions of Two Variables) | **Lab 0 (Intro to Mathematica)** | 12.1-12.2 (Graphs and Surfaces) |
| 28-Jan | 30-Jan | 31-Jan | 1-Feb |
| 12.3 (Contour Plots) + **Heatmaps** | 12.4-12.5 (Linear Functions and Level Surfaces) | **Lab 1 (3D Graphing)** | **Handout 1** |
| 4-Feb | 6-Feb | 7-Feb | 8-Feb |
| 14.1-14.2 (Partial Derivatives) | 14.3 (Local Linearity) | **Lab 2 (Partial Derivatives)** | 13.1 (Vectors) |
| 11-Feb | 13-Feb | 14-Feb | 15-Feb |
| 13.2 (More on Vectors) | 13.3 (Dot Product)+ **Euclidean Geometry** | **Handout 2** | 13.4 (Cross Product) + **Three Dimensional Pythagorean Theorem** |
| 18-Feb | 20-Feb | 21-Feb | 22-Feb |
| 17.1 (Parametrized Curves - Straight line, Circle, Helix) | 17.2 (Motion, Velocity, Acceleration)+ **Running Circles around Circles** | **Lab 3 (Parametric Plotting)** | 14.6 (Chain Rule) |
| 25-Feb | 27-Feb | 28-Feb | 1-Mar |
| **Handout 3** | **Review** | **Midterm 1** | 14.4 (Gradients and Directional Derivatives) + **Mt. Katahdin Trails** |
| 4-Mar | 6-Mar | 7-Mar | 8-Mar |
| 14.5 (Three dimensional Gradient and Tangent Plane) | 15.1 (Critical Points and Hessian) | **Lab 4 (Stationary Points)** | 14.6 (Second-order Partial - Clairaut's Theorem and Taylor Quadratic) |
| 11-Mar | 13-Mar | 14-Mar | 15-Mar |
| *Spring Vacation* | **Optional Second Derivative Test Project** | | *Spring Vacation* |
| 18-Mar | 20-Mar | 21-Mar | 22-Mar |
| *Spring Vacation* | **Optional Numerical Optimization Project** | | *Spring Vacation* |
| 25-Mar | 27-Mar | 28-Mar | 29-Mar |
| 15.3 (Lagrange Multipliers)+ **Rocket Science** | 15.2 (Optimization) + **Line of Best Fit** | **Handout 5** | 16.1-16.2 (Definite Integral of Functions of Two Variables) |

| Monday | Wednesday | Thursday | Friday |
|--------|-----------|----------|--------|
| 1-Apr | 3-Apr | 4-Apr | 5-Apr |
| 16.2-16.3 (Type I/II regions, Triple Integrals) | 16.4 (Double Integral in Polar Coordinates) + **Normal Density** | **Lab 5 (Volume Integration)** | 16.6 (Probability Density) + **Volumes of Hyperspheres** |
| 8-Apr | 10-Apr | 11-Apr | 12-Apr |
| **Handout 6** | **Review** | **Midterm 2** | 17.3 (Vector Fields) |
| 15-Apr | 17-Apr | 18-Apr | 19-Apr |
| 17.4 (Flow of a Vector Field) + **Flux Diagrams** | 18.1 (Line Intergral) | **Handout 7** | 18.2 (Line Intergrals on Paramterized Curves) |
| 22-Apr | 24-Apr | 25-Apr | 26-Apr |
| 18.3 (Gradient Fields - Path-Independent) | **Handout 8** | **Lab 6 (Vector Fields)** | 18.4 (Path-Dependent Fields and Green's Theorem) |
| 29-Apr | 1-May | 2-May | 3-May |
| 18.4 (Applications and Generalizations of Green's Theorem) | **Handout 9** | **Office Hour** | 21.2 (Change of Coordinates in Integrals - Jacobian) |
| 6-May | 8-May | 9-May | 10-May |
| **Handout 10** | **Review** | **Reading Period** | **Reading Period** |