**DASC 2594 – Multivariable Math for Data Scientists**

**Unit 1: Linear Equations, Matrix Algebra, Determinants, and Invertibility**

**Lesson Plan 3: Determinants, Volume, and Linear Transformations**

**John Tipton, 2020**

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| **Units** | **Lesson Plan 3** | **Readings** |
| **Unit 1**  **Linear Equations, Matrix Algebra, Determinants, and Invertibility** | **Essential Questions**   * What is a determinant? * How is a determinant a measure of volume? * What is the relationship between determinants and matrix transformations? | Chapter 3 of Linear Algebra and It’s Applications. David C. Lay |
| **Day 1**   * Identify and define the determinant * Identify the relationship between triangular matrices and determinants * Define and apply the properties of a determinant |
| **Day 2**   * Understand and apply Cramer's rule to solve a matrix * Understand and apply the determinant to calculate area or volume * Use matrix transformation to identify change of area or volume |