CALCULUS LAB SYLLABUS

Introduction to MATLAB

- Working with matrices
- Understanding general syntax

Plotting and Visualizing Data

- Plotting curves and surfaces
- Symbolic computations

Single Variable Optimization

- Evaluating extremum of a single variable function

Integration and Area

- Understanding integration as area under the curve

Volume Calculation by Integrals

- Evaluating volumes of solids of revolution

Functions of Two Variables

- Evaluating maxima and minima

Lagrange Multiplier Optimization

- Applying the Lagrange multiplier method for optimization

Volume Under Surfaces

- Evaluating volume under surfaces

Triple Integrals

- Evaluating triple integrals

Vector Calculus

- Evaluating gradient, curl, and divergence

Line Integrals

- Evaluating line integrals in vector fields

Applying Green's Theorem

- Applying Green's theorem to real-world problems