Lab 17

Ch En 263 – Numerical Tools

Due: 13 Nov. 2025

Instructions

- Complete the exercise(s) below, and submit the following files to Learning Suite:
  - Handwritten portion: scan each page (or take a picture) and combine them into a single pdf named: `LastName_FirstName_Lab17.pdf`
  - Excel portion: submit a workbook named `LastName_FirstName_Lab17.xlsx` where each worksheet tab is named "Problem_1", "Problem_2", etc.
  - Python portion: submit a separate file for each problem named `LastName_FirstName_Lab17_ProblemXX.py` where XX is the problem number.
- Warning: the LS assignment will close promptly at 11:59 pm and late assignments will only receive 50% credit.

Lab Exercises

1. Find the values of A, B, C, D and E in the equation

$$\frac{C_p}{R} = A + BT + CT^2 + DT^3 + ET^4$$

that best fit the C_p/R and T data given in `Lab17_P1_Data.csv`.

   (a) Use a trendline in a scatter plot in Excel to find the coefficients and the value of R^2.

   (b) Use `numpy.polyfit` to find the best-fit coefficients in Python and print the values to the console.