Problem Set 02: Importing Data and Plotting
New Learning Objectives under Evaluation

04.00 Create and execute a script

Learning Objective	Evidence
04.01 Create a script that adheres to programming standards	Complete programmer and contributor information in the script header (names and emails)
	Complete problem details including assignment number, problem number, and descriptive but concise description specific to the problem
	Code items are in the correct section (e.g. Initialization, Calculations, …)
	Computed values are assigned to variables
	Variables are commented with descriptions and units
	Code blocks have explanatory comments
	Minimal use of hardcoding
04.02 Execute a script from the MATLAB Command Window	Can execute a script from the Command Window by calling the script name

06.00 Import numeric data stored in .csv and .txt files

Learning Objective	Evidence
06.00 Import numeric data stored in .csv and .txt files	Data files are located in the current work directory
	Use correct command (`csvread` or `load`) for the data type
	Use single quotes around the filename with extension
	Headers within the data file are dealt with correctly
	• For .txt files, the headers are removed and only numerical values are imported
	• For .csv files, the command contains which row/columns have headers to ignore
	Output of loaded data is assigned to a variable

07.00 Create and evaluate x-y plots suitable for technical presentation

Learning Objective	Evidence
07.01 Create an x-y plot from a single data set	Correct syntax for the plot command: `plot(x, y, 'line/marker formatting')`
	Correct identification of the independent (x) and dependent (y) variables
	Correct use of data markers and lines:
	• data markers with no line (for raw data),
	• line with no data markers (known model),
	• data markers with overlaid line (for raw data with model)

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Learning Objective	Evidence
07.02 Create multiple plots in separate figure windows	Correct use of `figure` command Correct number of figures Correct numbers designate the active figure Coordinate the plot, plot labeling, and plot formatting commands with `figure` command
07.03 Create an x-y plot with multiple data sets in a single figure window	Correct use of the `hold` command `on/off` designated - Proper placement among the `plot` commands Correct use of data markers and lines: - data markers with no line (for raw data), - line with no data markers (known model), - data markers with overlaid line (for raw data with model) Color and marker/line style(s) are as specified or distinctive Correct syntax for the legend command: `legend('xypair1_label', 'xypair2_label',…)` - Each xypair#_label must in single quotes - xypair#_labels must be comma separated - xypair#_labels must be in the same order as the plot commands Properly formatted legend - Placed on figure such that it avoids covering - Each xypair#_label must be distinct and descriptive (but short)
07.04 Create multiple plots in a single figure window	Correct syntax for subplot command: `subplot(number_rows, number_columns, number_active_plot)` Correct numbers designate the active subplot Coordinate the plot, plot labeling, and plot formatting commands with subplot command Common x-axis scale, as appropriate for the problem

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Learning Objective	Evidence
07.05 Format plots for technical presentation	Correct syntax for title
	Correct syntax for xlabel
	Correct syntax for ylabel
	A descriptive title that references the problem context, the independent (x) variable, and the dependent (y) variable
	Clear x-axis label with units
	Clear y-axis label with units
	Gridlines
	Color and marker/line style(s) that are as specified or distinctive (when multiple data sets)
	Properly formatted legend, when multiple data sets and/or models
	X-axis scales match each other (when using subplots to compare data)
07.06 Interpret the shape of x-y plots	Clear description of the shape of or trend in the data or model
	Use the plot to answer questions