

Grading Rubric for Class Project

MAT 395/495: Scientific Data Analysis and Computing

Your class project will be evaluated based on the following rubric. Please try to address each rubric to the maximum extent possible given your abilities and constraints imposed upon you during a remote summer session. Each component will be weighed equally.

	Exceptional	Satisfactory	Insufficient
Program execution	Truly outstanding piece of coding given time constraints and user experience	0 errors	> 0 errors
Comments	Every line had substantial, clear language describing what this step is performing with appropriate links to external sites as needed	Every conceptual block of code at sufficient comments so a python literate individual can understand what is happening here and why	Insufficient comments present for a person with python skills who did not write the code to understand what's going on at each important step
Data Entry	Streamlined interface for entry/selection of data (beyond hard coding into script)	Data is automatically and robustly read in from either a local file on the computer or a remote server	Data entry is flawed or only allows for inputting data from that very specific file and location
Validation of data	Data is appropriately analyzed. Informative error messages are provided to inform individual of errors	Data is not allowed to proceed into code unless it adheres to the user specified criteria. Program terminates gracefully.	Invalid data entry results in crashing of program, or worse incorrect data analysis without throwing an error
Data Analysis	Analyzed data is properly and efficiently analyzed	Data is manipulated without error	Data is incompletely analyzed with additional steps required for proper analysis of data
Statistical Analysis	Data is analyzed using appropriate error or statistical means providing relevant feedback to you user	Basic analysis of data set for errors, outliers or statistical information is performed	Lack of statistical or error analysis of data as could be appropriate for the data set
Visualizati on of Data	Data is presented in a very clean, informative, effective manner. Multiple visualizations of different facets of the data or information learned from the analysis.	Data is visualized in plots or other visualization methods, as appropriate.	Data is not visualized or a simple, poorly constructed plot is used which will not behave well if the dataset was slightly modified.
Exporting of Data	Analyzed data is exported in a user desired format. Also visualized data is exported in appropriate file format.	Data is exported as a text file and an image (your visualization(s)) are stored in a user determined location.	Only text or a plot is exported and stored to the local harddrive without user interaction.
Error Handling	Your script can gracefully handle most common errors which could be anticipated. Informative feedback is provided where and why something failed.	Script provides basic error feedback and gracefully terminates.	Script crashes hard if any reasonably anticipated error occurs or proceeds to ends and provides incorrect data without informing the user.