ATM320 Spatial Data Analysis Using MATLAB

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Teaching Assistant: TBA
Classes: TBA
Office hours: TBA
Questions by email to Ping and Justin are welcome at any time

Learning Objectives

• Learn MATLAB programming language
• Learn to apply MATLAB for data analysis
• Apply MATLAB and data analysis tools to atmospheric data.

Text Book


Course Outline

Part I: MATLAB Programming
   (1) Introduction to Programming Using MATLAB
       Vectors and Matrices, Scripts, Selection/Loop, Strings, Data Structure, and I/O
   (2) Advanced Topics for Problem Solving with MATLAB
       Plot, Animation, 3D Plots, Sets, Sorting, and Sound/Image Processing

Part II: Applications to Spatial Data Analysis
   (1) A Review and Introduction of Climate Data and Basic Statistics
   (2) *Advanced Applications and Graphing: Linear Regression, Principal Component
       Analysis, and Spectral Analysis

Grading

Class participation including attendance: 30%
Homework: 20%
Mid-term test: 20%
Final project: 30%
It is important that instructors put a statement regarding academic dishonesty in their syllabi. This informs students that you are aware that cheating occurs and that you plan to pursue all incidents of academic dishonesty. Just as importantly, it allows you to formally clarify what sorts of grey-area actions are or aren't acceptable in your course (e.g., collaborative work). You may want to include a statement about your policy for handling cases of suspected cheating (e.g., "Any instance of academic dishonesty will be reported to the Academic Judiciary Committee and will result in an F for the course.")