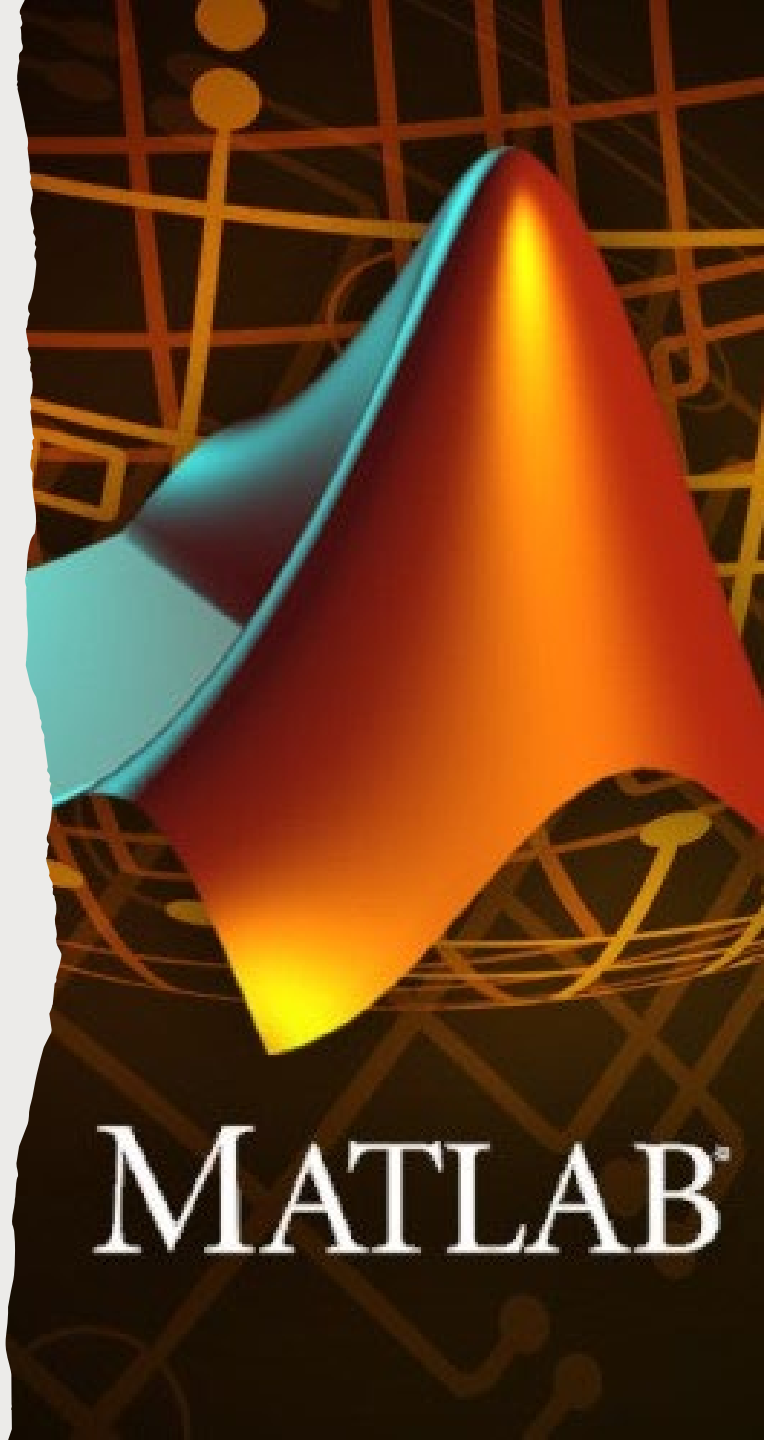
Data analysis for Geoscience

GEO8026

Dr. Matt Perks



Block 1: MATLAB Primer

Learning Outcomes:

- Understand the importance of code versioning
- Understand the main data types
- Understand how logic and relation operations work
- Understand how array indexing works
- Understanding of the role of `if` and `else` statements
- Understanding the difference between for and while loops and vectorisation

Skill Outcomes:

- Able to control source code using versioning tools (e.g. GitHub)
- Able to manipulate variables
- Able to perform arithmetic functions
- Able to use logic to test variable attributes
- Able to perform linear and matrix indexing
- Able to develop `if` and `else` statements
- Able to implement loops
- Able to load in common datasets into MATLAB

Block 1 structure

Part 1: Managing your code and data

Read through `managing_code_data_01.pdf` **and follow the instructions to:**

- **Set up a GitHub account**
- **Clone the GEO8026 repository to your PC, or manually download the Block 1 files to your PC**

*** Check the repository for updates before starting a new block ***

Part 2: MATLAB Primer

- **Load** `matlab_primer_02.mlx` **into MATLAB and work through each of the sections.**
- **Take your time working through these and note the behavior of each of the commands**

Part 3: MATLAB Challenges

- **Load** `matlab_challenges_03.mlx` **into MATLAB and work through the examples**
- **Share your answers with a member of the class and compare your answers**
- **Where approaches differ, discuss the thought process and critically evaluate each method**
- **Set your colleague a challenge to complete**