GEO111 – NUMERICAL SKILLS IN GEOSCIENCE

week #03: Plotting and visualizing data

11th April 2016

The purpose of this Lab is to become a nerd. And lose all your social skills. And sit at home all day in front of your computer. Which has become your only friend. You will achieve this higher state of Being by starting to learn to write and use scripts(m-files) in MATLAB. You will also do some stuff with loops (and hopefully appreciate their utility in enabling you to carry out repetitive tasks much more simply, which will save you time thus facilitating the drinking of more beers).

Work plan

Work through Section 2.3 (Chapter #2) of the GEO111 course handout on '3D plotting'. Then work through Chapter #3 ('MATLAB scripting and programming') of the GEO111 course handout. For additional/background reading:

- **MATLAB®7 – Getting Started Guide**
  - Chapter 4 – *Programming*
- **MATLAB – A Practical Introduction to Programming and Problem Solving**
  - Chapter 5 (first half) – *Loop Statements*

Learning goals (aka: 'what specifically should I have got to grips with?')

Topics and methodologies you should be familiar with:

- How to construct basic 3D plots.
- What a 'program' is in MATLAB – basic principals and usage of scripts and m-files.
- Loops.
- Commenting and debugging code.

MATLAB commands you should be familiar with:

- `contour` / `contourf`
- `meshgrid`
- the **colon operator**
- `for ... end`
- `num2str`