Data Analysis in Geophysics
ESCI 7205

intro

Bob Smalley
Room 103 in 3892 (long building)
Tu-Th 9:40-11:05
House 3 Conference room
(CERI Classroom)

Course Description

- Basics of Unix
- Basics of Shell Scripting (sh, bash, csh)
- AWK/nawk/gawk
- MATLAB®
- Generic Mapping Tool (GMT)
- Seismic Analysis Code (SAC)
- FTP, SSH, X display, VNC
- Other common programming languages (Fortran, C, ?)
- Web Page/HTML - SeaMonkey

References/Text

- Unix, Visual Quickstart Guide, 4th addition Ray and Ray, 2009. (Text: available online at http://proquest.safaribooksonline.com/home for free from U. Memphis network)
- Awk articles online (the original Awk book - http://cm.bell-labs.com/cm/cs/awkbook/)
- GMT Manual (html, pdf)
- SAC Manual (html, pdf)
- Getting started with Matlab (pdf)

Grading

- 70% homework assignments
- homeworks for each section of the class.
- Mathematically oriented homework assignments will use MATLAB®, no homework on C & Fortran programming.
- Each assignment will be passed out 1-2 weeks before it is due and should be worked on throughout the given time period.
- There will be small homework assignments with each class.
- 10 % Attendance and participation

Grading

- 20% Final Project

Each student will design, implement, and present a small scale programming project.

The project should utilize multiple programs and / or techniques discussed in the class. Use of SAC and/or MATLAB®, and/or GMT, as part of the project is mandatory.

A project related to the student's own research is encouraged.

Topic should be decided on and approved no later than Tue., Nov. 3rd.

Presentation of results (20 mins./Powerpoint) will take place in lieu of a final exam on the last day of class - Dec., 8th.

The project should be thoroughly documented and all scripts/programs/ macros will be turned in as part of the final grade.

Class Format

- Class will meet in the House 3 conference room.
  - Class presentations will be available in pdf format after class on the class web page.

(please save paper and toner and do not print them out!!)

Class web page

http://www.ceri.memphis.edu/people/smalley/ESCI7205F2011/ESCI_7205_Data_Analysis_in_Geophysics_F2011.html

Course Description

Introduction and Operating Systems

Be nice to your system administrators

- Mitch Withers, Bob Debula and Deshone Marshall are the system administrators for CERI computers.
- Bob specializes on the Unix machines and Deshone is responsible for PC and MAC maintenance. Chief UNIX Guru – Mitch.
- They keep the computers up-to-date and running efficiently so that we may work.
- Major problems with the computers and printers should be submitted to Mitch, Bob and Deshone via the CERI computer services request form on the CERI main page.

Questions?

Any Questions?