

Department of Atmospheric Sciences

COURSE ANNOUNCEMENT – SEMESTER I – 2007 – 2008

ATMS 491: Topics in Atmospheric Science

N: Computing and Data Analysis

Call number: 49496

Instructor: Prof. Somnath Baidya Roy, 209 Atmospheric Science Bldg.,
244-1123

Email: sbroy@atmos.uiuc.edu

Room and Time: 113 Atmospheric Science Bldg.; 10:30 – 11:45 T Th

Credit: 4 hours

Prerequisites: Math 241 or Consent of instructor

Summary: Analysis and visualization of atmospheric sciences data

The course consists of the following modules:

- Data structure and organization
- Data I/O in HDF, netCDF and other popular formats
- Graphical representation
- Statistics including distributions, hypothesis testing and statistical modeling
- Time series analysis in time and frequency domains
- Interpolation, focusing on gridding irregularly-spaced station data
- Eigen techniques using EOFs

Emphasis is placed on applications and real world examples. Students learn how to use MATLAB; become familiar with data available in the public domain; develop skills for visualizing, analyzing and modeling data.

Text: *Essential Matlab For Engineers and Scientists*, by Brian D. Hahn & Daniel T. Valentine, Butterworth-Heinemann Publishers, 3rd Edition (Required).