

## Computing for Geoscientists GEOS 5303

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Davis, J. C., (2002) **Statistics and Data Analysis in Geology**, Wiley, New York.

Hanselman, D. and B. Littlefield, (2005), **Mastering Matlab 7: A Comprehensive Tutorial and Reference**, Prentice-Hall, Upper Saddle River, NJ.

<http://www.phptr.com/title/0131430181>

MathWorks, (2005), **MATLAB Student Version**, Release 14, (\$99).

[http://www.mathworks.com/academia/student\\_version](http://www.mathworks.com/academia/student_version)

Goals: To introduce graduate students to computer tools at UTD in order to further research.

Introduction to the UNIX operating system and Windows

The UTD computer network and facilities

Problem solving, algorithms and computer programming

The MATLAB language and environment for computing and graphics

Elementary statistics, probability and linear algebra

Computer mapping and data analysis

Homework: Approximately six projects will be assigned, which make use of the computer to solve a sequence of related problems in statistical computing, with increasing complexity. All projects are due two weeks after being assigned.

Semester Project: A project of the student's own device (with help from the course faculty or the student's thesis advisor). It should be two to three times the effort of a homework project. A one page, written proposal will be due in mid-October. After review by the course faculty, a final version of the project will be assigned. The project will be reviewed on the basis of both creativity and practicality (given available resources). All projects are due at the end of the semester.