SYLLABUS

PHYS3330 *Numerical Methods in Physics*, Fall 2005

Dr. Jianlong Hu

Physics 3330 Course Policy

(1) Class attendance is required for this course.
(2) The preferred programming language for the homework and projects is C. Use of other languages is OK as well.
(3) If you want to open an Unix account to use UTD computing resource, logon to *http://www.utdallas.edu/ir* for more details.

Reference Books

Statistics for Nuclear and Particle Physicists, by Louis Lyons (**required**)
Introduction to Numerical Analysis, by F. B. Hildebrand (not required)
Numerical Analysis, by Richard Burden *et al.*, Sixth Edition (not required)
Numerical Methods for Scientists and Engineers, R.W. Hamming (not required)
A Course in Probability and Statistics, by Charles J. Stone (not required)

Course Content and Schedule

PHYS3330 is a one-semester course. The contents include a review of probability and statistics, error analysis, followed by numerical analysis of data, parameter fitting and hypothesis testing, optimizations, solving systems of equations, algorithms, and applications of numerical methods in physics.

Homework assignments are made approximately every two weeks in the semester, and are normally due in one week. Students should work on these problems, and turn in the homework on the due date marked on the assignment. No late homework is accepted.

A final project is required for the completion of the course. The approximate date to start the project is November 3, 2005.

Course Project

Final Project: *An In-depth Analysis of a Physical System using techniques learnt in this class.*

Grades

The grade of the course will be based on the homework (60%), and the final project (40%).

Office Hours

TTH 8:15—9:15 pm, Dr. Jianlong Hu FO3.222,
other time by appointment only. jianlong_hu@yahoo.com Messages 972-672-2954

Online Download

You can download lecture notes and homework at
http://www.utdallas.edu/~xinchou/phys3330-fall05.htm