

Schedule of events for Physics 3500, Qualitative Methods in Physics – Fall 2001

Meeting times: 10:30-11:45 Friday, SER122A

Conveners: C. Torre ([torre@cc.usu.edu](mailto:torre@cc.usu.edu)) and D. Peak ([peakd@cc.usu.edu](mailto:peakd@cc.usu.edu))

9/7/01	Estimations and back of the envelope calculations
9/14/01	Dimensional analysis, length and time scales, what is big and what is small
9/21/01	Limiting behavior: asymptotic and initial values
9/28/01	Taylor (and binomial) series representations
10/5/01	Symmetry and reduction of dimensionality
10/12/01	Conservation laws
10/19/01	Distinguishing the system from its surroundings
10/26/01	Zero, constant, and linear restoring forces; oscillators
11/2/01	Waves and Fourier analysis
11/9/01	Scaling behavior and power laws
11/16/01	Statistical analysis and mean field behavior
11/30/01	Physical regimes
12/7/01	Wrap up

Student responsibilities: (1) For 1 credit: Keep a journal of what transpires in class and what you think about outside class. Problems will be discussed in teams in class and some will be recommended for further study. In the journal, record all thoughts and ideas concerning the issues at hand. (2) For 2 or 3 credits: Do (1). In addition, select, in consultation with the conveners, some subset of the course topics and generate a series of nontrivial examples.