

Course: **Plasma Physics, 375 P,
unique no. ??????????**

Instructor: **Alan Wootton**

When: **Fall 1997**

This course is intended for final year undergraduate students and first year graduate students, who want to find out what plasma physics is about. It will tell you how to apply the ideas and techniques of this branch of physics to many different situations. No prior knowledge of the subject is required. The intent is to provide a survey, rather than a detailed exposition, with emphasis placed on applications and experimental results. The text will be based on "Introduction to Plasma Physics and Controlled Fusion", by F. Chen; additional notes will be provided on many of the topics. Both undergraduate and graduate research possibilities exist (see <http://w3fusion.ph.utexas.edu/frc/>).

Topics to be covered include:

- single particle motion
- plasmas as fluids
- diffusion
- waves in plasmas
- equilibrium and stability
- turbulence and chaos

Applications discussed include:

- laser produced plasmas
- plasma processing (jobs)
- space plasmas
- fusion plasmas
- plasma diagnostics